

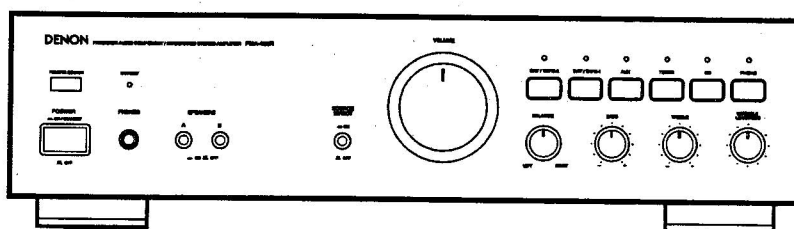
# DENON

Hi-Fi Integrated Stereo Amplifier

## SERVICE MANUAL

# MODEL PMA-425R


### INTEGRATED STEREO AMPLIFIER




#### CONTENTS

|  |        |
|--|--------|
| OPERATING INSTRUCTIONS .....               | 2-7    |
| REMOVAL OF EACH SECTION .....              | 8, 9   |
| BLOCK AND LEVEL DIAGRAM .....              | 10     |
| METHOD OF ADJUSTMENTS .....                | 11     |
| SEMICONDUCTORS .....                       | 12, 13 |
| PRINTED WIRING BOARD .....                 | 14, 15 |
| PARTS LIST OF P.W.B. ASS'Y .....           | 16, 17 |
| EXPLODED VIEW OF CHASSIS AND CABINET ..... | 18     |
| PARTS LIST OF EXPLODED VIEW .....          | 19     |
| WIRING DIAGRAM .....                       | 20     |
| SCHEMATIC DIAGRAM .....                    | 21     |

## NIPPON COLUMBIA CO., LTD.



**CAUTION**  
**RISK OF ELECTRIC SHOCK**  
**DO NOT OPEN**



**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

• FOR U.S.A. & CANADA MODEL ONLY

**CAUTION**

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

• NUR FÜR EUROPÄISCHE MODELLE

**Konformitätserklärung**

Die DENON Electronic GmbH  
 Hallesestraße 32  
 40880 Ratingen

Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 868/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

**DECLARATION OF CONFORMITY**

We declare under our sole responsibility that this product, to which this declaration relates, is in conformity with the following standards: EN55013, EN55020, EN60555-2 and EN60555-3.

**ÜBEREINSTIMMUNGSKLÄRUNG**

Wir erklären unter unserer Verantwortung, daß dieses Produkt, auf das sich diese Erklärung bezieht, den folgenden Standards entspricht: EN55013, EN55020, EN60555-2 und EN60555-3.

**DECLARATION DE CONFORMITE**

Nous déclarons sous notre seule responsabilité que l'appareil, auquel se réfère cette déclaration, est conforme aux standards suivants: EN55013, EN55020, EN60555-2 et EN60555-3.

**DICHIARAZIONE DI CONFORMITÀ**

Dichiariamo con piena responsabilità che questo prodotto, al quale la nostra dichiarazione si riferisce, è conforme alle seguenti normative: EN55013, EN55020, EN60555-2 e EN60555-3.

• POUR LE MODELE CANADIEN UNIQUEMENT

**ATTENTION**

POUR PREVENIR LES CHOCES ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

**DECLARACIÓN DE CONFORMIDAD**

Declaramos bajo nuestra exclusiva responsabilidad que este producto al que hace referencia esta declaración, está conforme con los siguientes estándares: EN55013, EN55020, EN60555-2 y EN60555-3.

**EENVORMIGHEIDSVKLAARING**

Wij verklaren uitsluitend op onze verantwoordelijkheid dat dit product, waarop deze verklaring betrekking heeft, in overeenstemming is met de volgende normen: EN55013, EN55020, EN60555-2 en EN60555-3.

**ÖVERENSSTÄMMELSEINTYG**

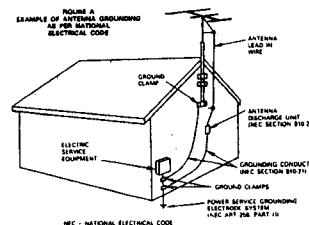
Härmed intygas helt på eget ansvar att denna produkt, vilken detta intyg avser, uppfyller följande standarder: EN55013, EN55020, EN60555-2 och EN60555-3.

**DECLARAÇÃO DE CONFORMIDADE**

Declaramos sob nossa exclusiva responsabilidade que este produto, ao qual esta declaração corresponde, está em conformidade com as seguintes normas: EN55013, EN55020, EN60555-2 e EN60555-3.

## SAFETY INSTRUCTIONS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.
15. Power Lines – An outdoor antenna should be located away from power lines.
16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has been spilled into the appliance; or
  - C. The appliance has been exposed to rain; or
  - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
  - E. The appliance has been dropped, or the enclosure damaged.
20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.



#### NOTE:

1. Always keep the POWER switch on the main unit turned on.
2. Turn the power on and off from the remote control unit.
3. Unplug the power cord when you do not plan to use the unit for a long period of time.

#### CAUTION:

If only the MUTE/STANDBY LED is lit, this means that the power is turned off from the remote control unit. Turn the power on from the remote control unit.

#### HINWEIS:

1. Lassen Sie den Netzschalter (POWER) am Hauptgerät stets eingeschaltet.
2. Schalten Sie den Strom mit dem Fernbedienungsgerät ein- und aus.
3. Trennen Sie das Netzkabel vom Netz ab, wenn Sie beabsichtigen, das Gerät über einen längeren Zeitraum hinweg nicht zu benutzen.

#### VORSICHT:

Wenn nur das Stummchalt-/Bereitschafts-LED (MUTE/STANDBY) leuchtet, so bedeutet dies, daß der Strom vom Fernbedienungsgerät aus ausgeschaltet worden ist. Schalten Sie den Strom vom Fernbedienungsgerät aus ein.

#### REMARQUE:

1. S'assurer que le commutateur d'alimentation (POWER) sur l'unité principale soit toujours dans la position activée.
2. Allumer et éteindre l'appareil avec la télécommande.
3. Débrancher le cordon d'alimentation lorsque l'appareil ne sera pas utilisé pendant une longue période.

#### ATTENTION:

Si seul le témoin (LED) de sourdine/veille (MUTE/STANDBY) est allumé, cela signifie que l'appareil est mis hors circuit par la télécommande. Allumer l'appareil avec la télécommande.

#### NOTA:

1. Tenete sempre l'interruttore della corrente (POWER) dell'unità principale nella posizione di attivazione.
2. Accendete e spegnete la corrente usando il telecomando.
3. Scollegate il filo di alimentazione quando avete intenzione di non usare l'apparecchio per un lungo periodo.

#### AVVERTIMENTO:

Se sono illuminati solo i LED di attenuazione/attesa (MUTE/STANDBY), questo significa che la corrente è stata spenta con il telecomando. Riaccendete la corrente usando il telecomando.

#### PRECAUTIONS FOR INSTALLATION

Leave at least 10cm of space between this unit and any other component placed above.

#### SICHERHEITSMASSNAHMEN BEIM EINBAU

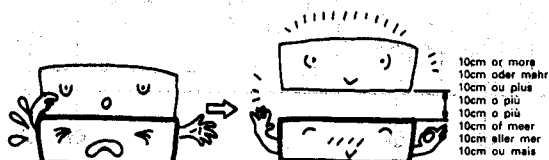
Lassen einen Mindestabstand von 10 cm zwischen diesem Gerät und der anderen Komponente, die daraufgestellt wird.

#### PRECAUTIONS D'INSTALLATION

Prévoir un espace d'au moins 10cm entre l'unité et tout autre appareil se trouvant au-dessus.

#### PRECAUZIONI PER L'INSTALLAZIONE

Lasciate uno spazio libero di almeno 10 cm fra quest'unità e qualsiasi altro componente che è collocato sopra la stessa.



#### NOTA:

1. Mantenga siempre activado el interruptor de alimentación (POWER) en la unidad principal.
2. Encienda y apague el equipo desde la unidad de control remoto.
3. Cuando la unidad vaya a estar fuera de uso por un periodo prolongado de tiempo, desconecte el cable de alimentación.

#### PRECAUCIÓN:

Cuando sólo el indicador LED de silenciamiento/modo de espera (MUTE/STANDBY) está encendido, significará que la alimentación a la unidad ha sido desconectada desde la unidad de control remoto. Conecte la alimentación desde la unidad de control remoto.

#### OPMERKING:

1. Zorg er altijd voor dat de stroomschakelaar (POWER) van het hoofdstel in de ingeschakelde stand staat.
2. Schakel de stroom in en uit m.b.v. de afstandsbediening.
3. Trek het netkabel uit wanneer u denkt het toestel gedurende een lange periode niet te gebruiken.

#### WAARSCHUWING:

Indien enkel de dempings-(MUTE/STANDBY) LED brandt, betekent dit dat de spanning met de afstandsbediening is uitgeschakeld. Schakel de spanning in met de afstandsbediening.

#### OBSERVA:

1. Låt alltid strömbrytaren (POWER) på huvudenheten vara påslagen.
2. Slå till/från strömmen med hjälp av fjärrkontrollen.
3. Koppla loss nätkabeln om apparaten inte skall användas under lång tid.

#### WARNING:

Om endast MUTE/STANDBY-lampan lyser betyder det att strömmen har stängts av via fjärrkontrollen. Strömmen måste då slås på via fjärrkontrollen igen.

#### NOTA:

1. Mantenha o interruptor da Corrente (POWER) na unidade principal sempre ligado.
2. Ligue a desligue a corrente a partir da unidade de controle remoto.
3. Desconecte o fio de força quando intender não utilizar a unidade por longo tempo.

#### CAUTELA:

Se apenas se iluminar o LED de surdina/espera (MUTE/STANDBY), isto significa que a força se desligou a partir do controle remoto. Ligue a força a partir do controle remoto.

#### PRECAUCIONES PARA LA INSTALACION

Deje por lo menos 10 cm. de espacio entre esta unidad y cualquier otro componente situado sobre ella.

#### VOORZORGSMAATREGELEN

Bij plaatsing dient u een ruimte van minstens 10 cm open te laten tussen dit toestel en een ander erop geplaatst component.

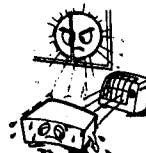
#### FÖRSIKTIGHETSÅTGÄRDER VID INSTALLATIONEN

Se till att det finns minst 10 cm mellanrum mellan apparaten och en annan apparat som ställs ovanpå.

#### CUIDADOS NA INSTALAÇÃO

Deixe um espaço de pelo menos 10 cm entre esta unidade e qualquer outro componente colocado acima.

#### NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION NOTE SULL'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIKEN/OBSERVERA OBSERVAÇÕES QUANTO AO USO



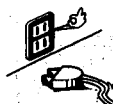
- Avoid high temperatures. Allow for sufficient heat dispersion when installed on a rack.
- Vermeiden Sie hohe Temperaturen. Beachten Sie, daß eine ausreichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- Eviter des températures élevées. Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.
- Evitate di esporre l'unità a temperature alte. Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.
- Evite altas temperaturas. Permita la suficiente dispersión del calor cuando esté instalado en la consola.
- Vermijd hoge temperaturen. Zorg voor een degelijk hitteafvoer indien het apparaat op een rak wordt geplaatst.
- Undvik höga temperaturer. Se till att det finns möjlighet till god värmeavledning vid montering i ett rack.
- Evite temperaturas altas. Conceda suficiente dispersão de calor quando o equipamento for instalado numa prateleira.



- Handle the power cord carefully. Hold the plug when unplugging the cord.
- Gehen Sie vorsichtig mit dem Netzkabel um. Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- Manipuler le cordon d'alimentation avec précaution. Tenir la prise lors du débranchement du cordon.
- Maneggiare il filo di alimentazione con cura. Agitare per la spina quando scollegate il cavo dalla presa.
- Manje el cordón de energía con cuidado. Sostenga el enchufe cuando desconecte el cordón de energía.
- Hanterat het netkabel voorzichtig. Houd het snoer bij de stekker vast wanneer deze moet worden aan- of losgekoppeld.
- Hantera nätkabeln varsamt. Håll i kabeln när den kopplas från eluttaget.
- Manuseie com cuidado o fio condutor de energia. Segure a tomada ao desconectar o fio.



- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.
- Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.
- Mantenga el equipo libre de humedad, agua y polvo.
- Laat geen vochtigheid, water of stof in het apparaat binnendringen.
- Uitsluit inte apparaten for fukt, vatten och damm.
- Mantenha o aparelho livre de qualquer umidade, água ou pó.



- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.
- Disinnestate il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.
- Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo.
- Neem altijd het netkabel uit het stopcontact wanneer het apparaat gedurende een lange periode niet wordt gebruikt.
- Koppla ur nätkabeln om apparaten inte kommer att användas i lång tid.
- Desligue o fio condutor de força quando o aparelho não tiver que ser usado por um longo período.



\*For sets with ventilation holes

- Do not obstruct the ventilation holes.
- Die Belüftungsoffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.
- Non coprire i fori di ventilazione.
- No obstruya los orificios de ventilación.
- De ventilatieopeningen mogen niet worden geblokkeerd.
- Tapp inte till ventilationsöppningarna.
- Não obstrua os orifícios de ventilação.



- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.
- E' importante che nessun oggetto è inserito all'interno dell'unità.
- No deje objetos extraños dentro del equipo.
- Laat geen vreemde voorwerpen in dit apparaat vallen.
- Se till att främmande föremål inte tränger in i apparaten.
- Não deixe objetos estranhos no aparelho.

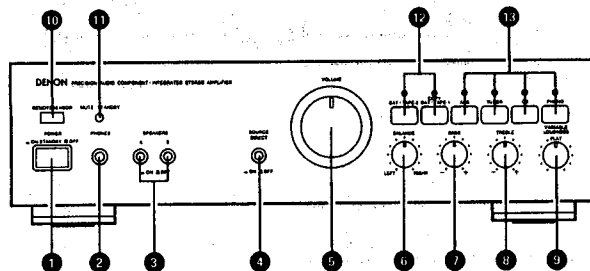


- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.
- Assicuratevi che l'unità non venga in contatto con insetticidi, benzolo o solventi.
- No permita el contacto de insecticidas, gasolina y diluyentes con el equipo.
- Laat geen insectenverdelgende middelen, benzine of verdunder met dit apparaat in contact komen.
- Se till att inte insektmedel på spraybruk, bensin och thinner kommer i kontakt med apparatens hölje.
- Não permita que inseticidas, benzina e dissolvente entrem em contacto com o aparelho.

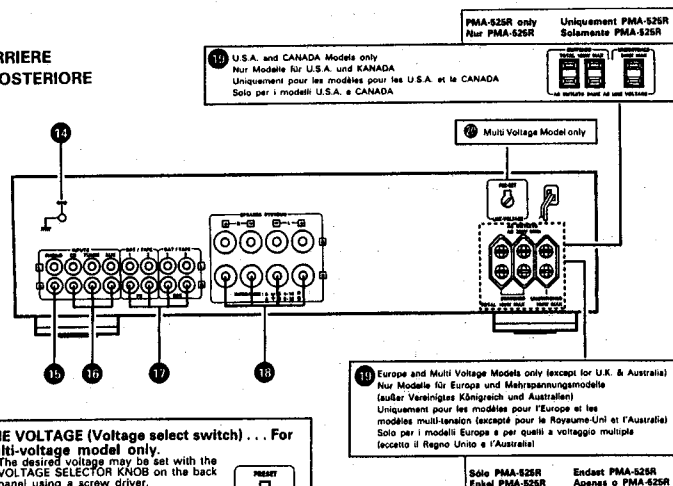


- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.
- Non smontare mai, né modificare l'unità in nessun modo.
- Nunca desarme o modifique el equipo de ninguna manera.
- Nooit dit apparaat demonteren of op andere wijze modificeren.
- Ta inte när apparaten och försök inte bygga om den.
- Nunca desmonte ou modifique o aparelho de alguma forma.

**FRONT PANEL**  
FRONTPLATTE  
PANNEAU AVANT  
PANNELLO ANTERIORE

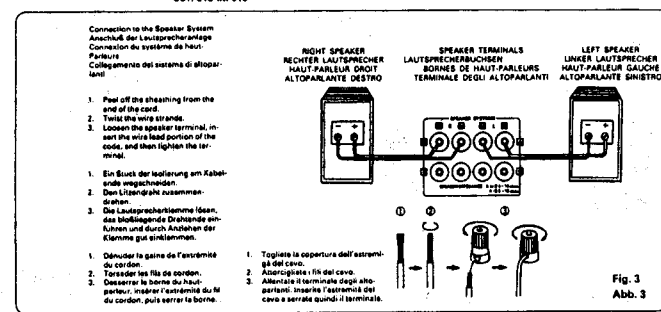
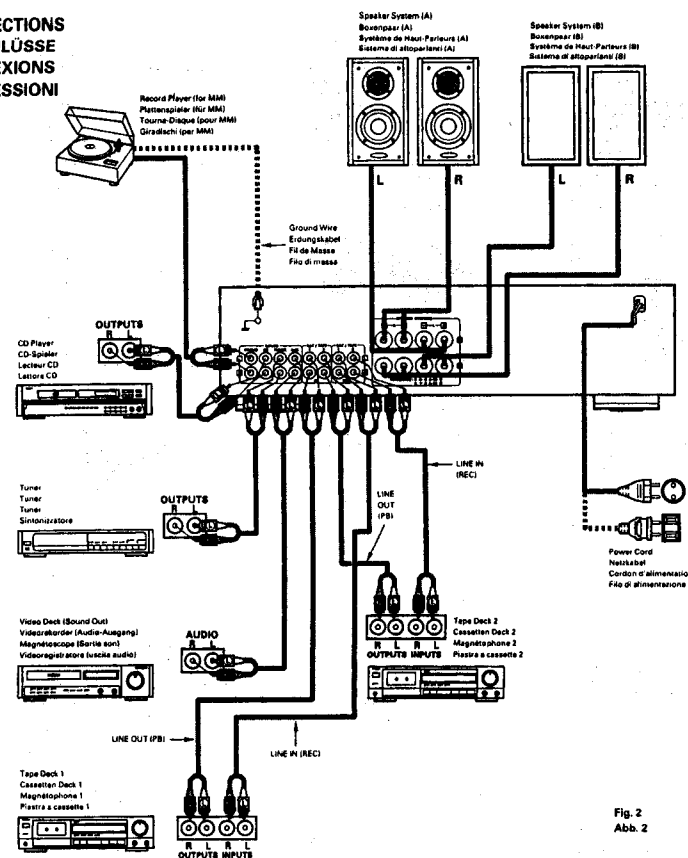


**REAR PANEL**  
RÜCKWAND  
PANNEAU ARRIERE  
PANNELLO POSTERIORE



| 1 GND | 2 PHONO   | 3 CD, TUNER, AUX                          | 4 DAT/TAPE-1, DAT/TAPE-2<br>TAPE PB • TAPE REC   | 5 SPEAKERS                   |
|-------|---|---|--|------------------------------|
| GND   | Phono Input Terminals<br>(Phono)                    | Input Terminals<br>(CD, TUNER, AUX)       | Playback and Recording Terminals<br>• Playback Terminals<br>• Recording Terminals                      | Speaker Terminals            |
| GND   | Schellplattenspieler-<br>Eingangsbuchsen<br>(Phono) | Eingangsbuchsen<br>(CD, TUNER, AUX)       | Tonband-Ein/Ausgänge<br>• Wiedergabe<br>• Aufnahme   | Lautesprecher-<br>terminals  |
| GND   | Bornes d'entrée<br>(phono)                          | Bornes d'entrée<br>(CD, TUNER, AUX)       | Bornes de lecture et d'enregistrement<br>• Bornes de lecture<br>• Bornes d'enregistrement              | Bornes de haut-<br>parleurs  |
| GND   | Terminali di ingresso<br>Phono                      | Terminali di ingresso<br>(CD, TUNER, AUX) | Terminali di riproduzione registrazione<br>• Terminali di riproduzione<br>• Terminali di registrazione | Terminali degli altoparlanti |

**CONNECTIONS**  
ANSCHLÜSSE  
CONNEXIONS  
CONNESSIONI



## DESIGNATIONS AND FUNCTIONS OF PANEL CONTROLS

- 1 **POWER (Power Switch)**  
When the power switch is turned ON (—), the MUTE/STANDBY LED ⑪ lights.  
When the power switch is turned ON, power is supplied to the unit. It takes a few seconds after the power is turned on for the unit to warm up. This is due to the built-in muting circuit that eliminates noise during the on/off operation.
- 2 **PHONES (Headphone Jack)**  
This jack is used to plug in the headphones.
- 3 **SPEAKERS (Speaker Selection Switch)**  
The PMA-525R can be connected to two speaker systems: speaker system A and speaker system B.  
When A is pressed, the speaker system connected to speaker output terminals A operates.  
When B is pressed, the speaker system connected to speaker output terminals B operates.  
When A and B are pressed on together, both speaker systems operate simultaneously. When the A and B switches are both off (in the out position), there is no output from the speaker terminals. This setting is used to listen to playback through the headphones.
- 4 **SOURCE DIRECT (Source Direct Switch)**  
The controls (BALANCE, VARIABLE LOUDNESS, and TONE) can be used when this switch is in the OFF (—) position.  
When set to the ON (—) position, the above controls are by-passed and the signals are input directly to the volume control circuit, providing high quality sound.
- 5 **VOLUME (Volume Control)**  
This knob controls the overall volume level.  
Turn the knob to the right (↻) to raise the volume and to the left (↻) to lower it.
- 6 **BALANCE (Balance Control)**  
This knob is used to adjust the balance between the left and right channels. When it is set to the center position, the amplitude of the amplifier is equal on both sides. If there is a difference in the left and right channel output voltages for a cartridge, move the knob to the left and the right to adjust it. If the volume on the right side is too low, turn the knob to the right (↻). If the volume on the left side is too low, turn the knob to the left (↻). This will achieve an even balance on the left and right sides.
- 7 **BASS (Bass Control)**  
This knob is used to control the bass quality of the sound. When the knob is set at the center position, the frequency characteristics are flattened in the range below 1000 Hz. The bass is emphasized as the knob is moved off center to the right (↻), and reduced as it is moved to the left (↻).
- 8 **TREBLE (Treble Control)**  
This knob is used to control the treble quality of the sound. When the knob is set at the center position, the frequency characteristics are flattened in the range above 1000 Hz. The treble is emphasized as the knob is moved off center to the right (↻), and reduced as it is moved to the left (↻).
- 9 **VARIABLE LOUDNESS (Loudness Control)**  
At low volumes, the human ear is less sensitive to low (BASS) and high (TREBLE) frequencies. Use this control to compensate for this deficiency when listening at low volume levels. Turn this control counter-clockwise until a natural balance of bass and treble sound has been restored.
- 10 **REMOTE SENSOR (Remote Control Sensor)**  
This sensor receives the infra-red light transmitted from the wireless remote control unit.  
For remote control, point the wireless remote control unit towards the sensor.
- 11 **MUTE/STANDBY LED**  
This LED flashes while the muting circuit is activated when the power is turned on and when muting is turned on from the remote control unit, and remains lit (without flashing) while the power is on. In addition, this LED flashes rapidly when the protection circuit is activated.
- 12 **TAPE SELECTOR (Tape Selector/Monitor Buttons)**
  - **COPY/DAT/TAPE-1:**  
Press this button once, COPY/DAT/TAPE-1 indicator will light up and then you can play tape source on DAT/TAPE-1 terminal. In this state you can copy COPY/DAT/TAPE-1 source to DAT/TAPE-2 terminal.  
Press again the button currently accessed, to play sources selected by input selector ⑬, indicator goes out.
  - **DAT/TAPE-2:**  
Press this button once, DAT/TAPE-2 indicator will light up and then you can play tape or video source of DAT/TAPE-2 terminal. Press again the button currently accessed, to play sources selected by input selector ⑬, indicator goes out.
- 13 **INPUT SELECTOR (Input Select Switch)**  
Use these to select the program source.  
When the switch for the desired program source is selected, its LED lights. One program source only can be selected at a time, as follows:
  - **PHONO:** Use this position when using the record player connected to the PHONO jacks. The record player should have an "MM" cartridge.
  - **CD:** Use this position when using the CD player, etc., connected to the CD jacks.
  - **TUNER:** Use this position when using the tuner, etc., connected to the TUNER jacks.
  - **AUX:** Use this position when using the component connected to the AUX jacks.

PMA-525R only

- 14 **AC OUTLETS: Rear Panel Side**
  - **For U.S.A., Canada and Multi-voltage models.**  
AC outlets are used for connecting amplifier component units, such as tuner, turntable, tape deck, etc.
  - **SWITCHED (Total capacity: 120 W):**  
These outlets are turned ON/OFF when main power switch and POWER button on the Remote Control Unit is turned on/off.
  - **UNSWITCHED (Capacity: 240 W)**  
This outlet is always ON whether power switch is on or OFF.
  - **For Europe model, except the U.K. and Australia models.**  
AC outlets are used for connecting amplifier component units, such as tuner, turntable, tape deck, etc.
  - **SWITCHED (Total capacity: 100 W):**  
These outlets are turned ON/OFF when main power switch and POWER button on the Remote Control Unit is turned on/off.
  - **UNSWITCHED (Capacity: 100 W)**  
This outlet is always ON whether power switch is on or OFF.

## OPERATION

### PREPARATION

#### 1. CHECKING CONNECTIONS

- Make sure that all the connections are proper by referring to the back panel. (Fig. 2~3)
- Check the polarity (positive and negative) of connections, and the directivity of stereo separation (right cord to right channel terminal, and left cord to left channel terminal).
- Check the directivity of pin cord connection.

#### 2. SETTING OF EACH KNOB

- Turn the volume control knob ⑤ counterclockwise, to left.
- Set the rotary knob to "flat" or "center position".
- Set SOURCE DIRECT ④ to "OFF (—)".
- Press the TAPE MONITOR switch ⑩ to turn the LED off.
- Turn on the speaker selection switch for desired speaker system (A or B).

After checking the above items, turn on the power, the amplifier is set in the ready mode in a few seconds.

### PLAYING A RECORD

1. Set the INPUT SELECTOR switch ⑬ to "PHONO".
2. Operate the turntable and play the record.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

### PLAYBACK OF CD PLAYER

1. Set the INPUT SELECTOR switch ⑬ to "CD".
2. Operate the CD player.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

### RECEPTION OF RADIO PROGRAMS

1. Set the INPUT SELECTOR switch ⑬ to "TUNER".
2. Operate the tuner to receive a radio program.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

### CONNECTIONS OF AUDIO EQUIPMENT TO AUX TERMINALS

1. Set the INPUT SELECTOR switch ⑬ to "AUX" Position.
2. Operate the Audio equipment Systems.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

### PLAYBACK WITH TAPE DECK

1. Set the TAPE MONITOR switch ⑩ to "COPY/DAT/TAPE-1" or "DAT/TAPE-2".
2. Operate the Tape Deck.
3. Turn the volume and tone controls to yield an appropriate volume and sound quality.

### RECORDING WITH TAPE DECK

The source to be recorded is selected by the INPUT SELECTOR switch ⑬.

### COPYING FROM ONE TAPE TO ANOTHER

To copy from COPY/DAT/TAPE-1 to DAT/TAPE-2, press the COPY/DAT/TAPE-1 switch ⑫.

#### NOTE:

Copying is not possible from DAT/TAPE-2 to COPY/DAT/TAPE-1.

### MONITORING THE RECORDING

(If a 3-head tape deck is used, the sound being recorded can be monitored during the recording.)

Use the TAPE MONITOR switches ⑩ to select the tape deck onto which the sound is being recorded.

The LED for the selected tape deck lights.

### CAUTION

#### Protective Circuit

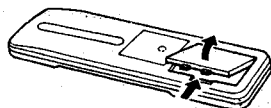
This set is equipped with a high speed protective circuit. This circuit protects the internal circuitry from damage due to large currents flowing when the speaker jacks are not completely connected or when an output is generated by a short circuit. This protective circuit's operation cuts off the output to the speakers. In such a case, be sure to turn the power to the set off and check the connections to the speakers. Then turn the power on again. After muting for a few seconds, the set will operate normally.

## REMOTE CONTROL OPERATION

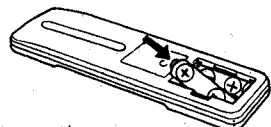
The accessory Remote Control Unit is used to control the amplifier from a convenient distance.

### (1) Inserting the Dry Cell Batteries

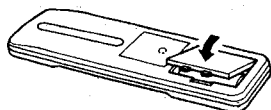
1. Remove the battery cover on the Remote Control Unit.



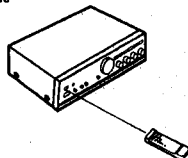
2. Insert two dry cell batteries as shown in the diagram on the battery supply unit.



3. Replace the battery cover.



### (2) Directions for use



### Notes on Battery Usage

- RC-176 uses the size R6P (AA) dry cell batteries.
- The batteries will need to be replaced approximately once a year. This will depend upon how often the Remote Control Unit is used.
- If, in less than a year from the time new batteries were inserted, the Remote Control Unit fails to operate the Amplifier from a near-by position, it is time to replace the batteries.
- Insert the batteries properly, following the polarity diagram inside the battery compartment.
- Batteries are prone to damage and leakage. Therefore:
  - Do not mix new batteries with used ones.
  - Do not mix different types of batteries.
  - Do not jumper opposite poles of the batteries, expose them to heat, break them open, nor expose them to open fire.
- If the batteries have leaked, remove any traces of battery fluid from the battery compartment wiping thoroughly with a dry cloth. Then insert new batteries.

- Operate the Remote Control Unit while pointing it towards the Remote Control Sensor on the Amplifier as shown in the diagram on the left.
- The Remote Control Unit can be used at distances up to about 8 meters in a straight line from the amplifier. This distance will decrease if there are obstructions blocking the infra-red light transmission or if the Remote Control Unit is not directed straight at the amplifier.

### Note on operation

- Do not press the operating buttons on the Amplifier and the Remote Control Unit at the same time. This will cause misoperation.
- Operation of the Remote Control Unit will become less effective or erratic if the infrared Remote Control Sensor on the Amplifier is exposed to strong light or if there are obstructions between the Remote Control Unit and the sensor.
- In case you operate a VCR, TV or other components by remote control, do not operate buttons on two different remote control units at the same time. This will cause misoperation.

**Besides being able to operate the PMA-525R/425R amplifier with this Remote Control Unit, you can also operate a DENON cassette deck and CD player from this handy full-system Remote Control Unit.**

### Remote control section

#### Full-system Remote Control Unit

The full-system Remote Control Unit operates all major functions of the Amplifier, such as function switching, volume control. But that's not all! The same control pad can also control the major functions of a DENON CD player and cassette deck and tuner when combined with the PMA-525R/425R to create a remarkably ergonomic and versatile DENON system with all the quality sound reproduction that the devoted audiophile expects.

## Remote Control Unit RC-176 supplied with the PMA-525R/425R

**1 [POWER] button**  
This button can be used to turn on and off the power of the amplifier.  
However, the power for the amplifier turned on and off if it is in the power standby mode and the power cord is plugged in.

**2 [MUTING] button**  
Pressing this switch will activate the muting condition and no signals will be output to the speakers.

**Other buttons**  
Other buttons are exclusively for the PMA-525R/425R, and function in the same way as the corresponding buttons on the set.

**DECK**

|              |  |
|--------------|--|
| PLAY ▶       | PLAY button  |
| ◀ PLAY (REV) | PLAY (REV) button  |
| ■ STOP       | STOP button  |
| ◀◀ REW       | REWIND button  |
| FF ▶▶        | FF button  |
| ● REC        | Refer to the operating instructions of your DENON tape deck. |
| ⏸ PAUSE      | PAUSE button   |
| A/B          | A/B DECK SELECT button                                       |

**TUNER**

|           |   |
|-----------|---|
| ▶ PLAY    | PLAY button   |
| ■ STOP    | STOP button   |
| ◀◀        | Reverse Track Search button                                 |
| ▶▶        | Forward Track Search button                                 |
| RANDOM    | Refer to the operating instructions of your DENON CD player |
| REPEAT    |   |
| DISC SKIP |   |
| ⏸ PAUSE   | PAUSE button  |

**PRESET ⬆ buttons**  
Press this button to move up or down among the preset station numbers.

**CAUTION:**

- If the power is turned off with the Remote Control Unit, the set is switched to the power stand-by state. If you are absent for a long period of time, unplug the power cord.
- Only the MUTE/STANDBY LED ● lights when in the power stand-by mode.
- You may experience erratic operation of the Remote Control Unit if it is operated in fluorescent light and direct sunlight, in particular if this light strikes the Remote Control Sensor on the Amplifier. However, this is not a malfunction, and if this should happen, simply protect the sensor against such light.

| Technical Data<br>(typical value)  | Technische Daten<br>(typische Werte)   | MODEL: PMA-525R  | MODEL: PMA-425R  |
|--|--|--|--|
| <b>POWER AMPLIFIER SECTION</b><br><b>Rated Output Power:</b><br>* Both channel driven<br>(8 $\Omega$ /ohms Load)<br>20 Hz to 20 kHz, T.H.D. 0.08%<br>(4 $\Omega$ /ohms Load)<br>DIN, 1 kHz, T.H.D. 0.7%<br><br>**Continuous 52W<br>per channel min into 8 $\Omega$ /ohms<br>from 20 Hz to 20 kHz with<br>no more than 0.08% total<br>harmonic distortion.<br><b>Total Harmonic Distortion:</b><br>(-3 dB at rated output,<br>8 $\Omega$ /ohms) | <b>LEISTUNGSENDEN VERSTÄRKER</b><br><b>Nenn-Ausgangsleistung:</b><br>* Beide Kanäle betriebsbereit<br>(an 8 $\Omega$ /Ohm)<br>20 Hz bis 20 kHz, T.H.D. 0,08%<br>(an 4 $\Omega$ /Ohm)<br>DIN, 1 kHz, T.H.D. 0,7%<br><br>**Fortlaufend 52W<br>pro Kanal min. zu 8 $\Omega$ /Ohm von<br>20 Hz bis 20 kHz mit einem<br>Gesamtklirrfaktor von nicht<br>mehr als 0,08%.<br><b>Gesamtklirrfaktor:</b><br>(-3 dB bei Nennausgang,<br>8 $\Omega$ /Ohm)  | 52 W + 52 W<br>85 W + 85 W<br><br>52 W<br><br>0,02%  | 45 W + 45 W<br>70 W + 70 W<br><br>45 W<br><br>0,02%  |
| <b>PRE AMPLIFIER SECTION</b><br><b>Rated Output:</b><br>(Recut Terminal)<br><br><b>Input Sensitivity/</b><br><b>Input Impedance:</b><br>The value in parentheses ( )<br>refers to the input impedance<br>when SOURCE DIRECT is ON.<br><br>PHONO:<br>CD, TUNER, AUX<br>TAPE-1, TAPE-2:<br><br>RIAA Deviation:<br>PHONO:<br>Within $\pm 0.5$ dB<br><b>Maximum Input:</b>   | <b>VORVERSTÄRKER</b><br><b>Nenn-Ausgangsleistung:</b><br>(Aufnahme-Ausgangsbuchse)<br><br><b>Eingangsempfindlichkeit/</b><br><b>Eingangsimpedanz:</b><br>Der in Klammern ( ) angegebene<br>Wert bezieht sich auf die Eingangs-<br>impedanz, wenn der Quellen-<br>Direktschalter (SOURCE DIRECT)<br>eingeschaltet (ON) ist.<br>PHONO:<br>CD, TUNER, AUX<br>TAPE-1, TAPE-2:<br><br>Abweichung von der<br>RIAA-Kennlinie: PHONO:<br>Innerhalb $\pm 0,5$ dB<br><b>Maximaler Eingang:</b> | 150 mV<br><br>2,5 mV / 47 k $\Omega$ /kohms<br>150 mV / 30 k $\Omega$ /kohms<br>(150 mV / 25 k $\Omega$ /kohms)  | 150 mV<br><br>2,5 mV / 47 k $\Omega$ /kohms<br>150 mV / 30 k $\Omega$ /kohms<br>(150 mV / 25 k $\Omega$ /kohms)  |
| <b>OVERALL CHARACTERISTICS</b><br><b>SN Ratio (IHF A Network):</b><br>(input terminals short-<br>circuited)<br>SOURCE-DIRECT: ON<br><br><b>Tone Control Adjustable</b><br>Range:<br>BASS<br>TREBLE<br><b>Variable Loudness:</b>  | <b>GESAMTEIGENSCHAFTEN</b><br><b>Signal/Rauschabstand</b><br>(R.F.A. Weighted):<br>(Eingänge kurzgeschlossen)<br>SOURCE DIRECT: ON<br><br><b>Klangregelbereich:</b><br>TIEFEN (BASS)<br>HÖHEN (TREBLE)<br><b>Physiologischer Lautstärkerregler:</b>  | PHONO:<br>MM: 86 dB<br>(at 5 mV input)<br>CD, TUNER, AUX<br>TAPE-1, TAPE-2: 107 dB<br><br>20 Hz ~ 20 kHz<br>PHONO<br>160 mV / 1 kHz<br><br>PHONO:<br>MM: 86 dB<br>(at 5 mV input)<br>CD, TUNER, AUX<br>TAPE-1, TAPE-2: 105 dB<br><br>20 Hz ~ 20 kHz<br>PHONO<br>160 mV / 1 kHz   | PHONO:<br>MM: 84 dB<br>(at 5 mV input)<br>CD, TUNER, AUX<br>TAPE-1, TAPE-2: 105 dB<br><br>20 Hz ~ 20 kHz<br>PHONO<br>160 mV / 1 kHz  |
| <b>OTHERS</b><br><b>Power Supply</b><br><br><b>AC Outlets</b><br>Switched x2: (PMA-525R only)<br>(PMA-525R only)<br><br>Unswitched x1:<br>(PMA-525R only)<br><br><b>Power Consumption</b><br><b>Dimensions (W) x (H) x (D)</b><br><b>Net Weight</b>  | <b>SONSTIGES</b><br><b>Netzspannung und-frequenz</b><br><br><b>Wechselstrom-Ausgänge</b><br>(Nur PMA-525R)<br>Geschaltet x2: (Nur PMA-525R)<br><br>Ungeschaltet x1:<br>(Nur PMA-525R)<br><br><b>Leistungsaufnahme</b><br><b>Abmessungen (B) x (H) x (T)</b><br><b>Nettogewicht</b>   | AC 230V / 50 Hz<br>(For Europe and Australia)<br>AC 120V / 60 Hz<br>(For U.S.A. and Canada)<br>AC 110 / 220 / 230V, 50 / 60 Hz<br>(For Multiple)<br><br>100W (Total) (For Europe and Multi<br>voltage models, except the U.K. model)<br>120W (Total) (For U.S.A. and Canada<br>models)<br>100W (For Europe and Multi Voltage<br>models, except the U.K. model)<br>240W (For U.S.A. and Canada<br>models)<br>185 W (IEC)<br>3.0A (U.S.A., and Canada models)<br>434(W) x 120(H) x 282(D)mm<br>(17-3/32" x 4-22/32" x 11-3/32")<br>6.2 kg (13 lbs 11 oz) | AC 230V / 50 Hz<br>(For Europe and Australia)<br>AC 120V / 60 Hz<br>(For U.S.A. and Canada)<br>AC 110 / 220 / 230V, 50 / 60 Hz<br>(For Multiple)<br><br>170 W (IEC)<br>2.3 A (U.S.A., and Canada models)<br>434(W) x 120(H) x 282(D)mm<br>(17-3/32" x 4-22/32" x 11-3/32")<br>6.0 kg (13 lbs 4 oz) |
| <b>REMOTE CONTROL UNIT</b><br>(RC-178)<br><b>Remote control system:</b><br>Infrared pulse system<br><b>Power supply:</b><br>3V DC, Two size R6P ("AA")<br>dry cell batteries<br><b>External dimensions:</b>  | <b>FERNBEDIENUNGSGERÄT</b><br>(RC-178)<br><b>Fernbedienungs-System:</b><br>Infrarot-Impulse<br><b>Stromversorgung:</b><br>3V Gleichstrom, zwei Trocken-<br>zellen Batterien vom format R6 (AA)<br><b>Äußere Abmessungen:</b>   | 55(W) x 194(H) x 18(D)mm<br>(2-11/64" x 7-41/64" x 45/64")<br>100 g (about 3.5 oz)<br>(including batteries)  | 55(W) x 194(H) x 18(D)mm<br>(2-11/64" x 7-41/64" x 45/64")<br>100 g (about 3.5 oz)<br>(including batteries)  |
| <b>Weight:</b>   | <b>Gewicht:</b>  |  |  |

Note: \*1 For Europe and Multi-Voltage  
 \*2 For U.S.A. and Canada  
 Hinweis: \*1 Für Europa und Mehrspannung  
 \*2 Für die USA und Kanada

• Specifications and contents are subject to change without notice for purposes of improvement.  
 • Änderungen des Inhalts und der technischen Daten zum Zwecke der Verbesserung vorbehalten.

#### ENGLISH

Please check to make sure the following items are included with the main unit in the carton:

- (1) Operating Instructions ..... 1
- (2) Remote Control Unit (RC-178) ..... 1
- (3) Batteries R6P (AA) ..... 2

#### DEUTSCH

Bitte überprüfen Sie, ob die folgenden Teile vollständig in der Verpackung enthalten sind:

- (1) Bedienungsanleitung ..... 1
- (2) Fernbedienung (RC-178) ..... 1
- (3) Batterien vom Typ R6P (AA) ..... 2

#### FRANCAIS

Veuillez contrôler que les articles suivants sont bien joints à l'appareil principal dans le carton:

- (1) Mode d'emploi ..... 1
- (2) Unité de télécommande (RC-178) ..... 1
- (3) Piles R6P (AA) ..... 2

#### ITALIANO

Controllare che le parti seguenti si trovino imballate con l'apparecchio nella scatola di spedizione.

- (1) Libretto delle istruzioni ..... 1
- (2) Telecomando (RC-178) ..... 1
- (3) Batterie R6P (AA) ..... 2

#### MEMO:

#### ESPAÑOL

Por favor verifique asegurándose de que los siguientes artículos son empacados en la caja pero separados de la unidad principal.

- (1) Manual de instrucciones ..... 1
- (2) Unidad de control remoto (RC-178) ..... 1
- (3) Pilas R6P (AA) ..... 2

#### NETHERLANDS

Kontroleer of de volgende accessoires bij het hoofdtoestel in de doos zijn verpakt:

- (1) Gebruiksaanwijzing ..... 1
- (2) Afstandsbediening (RC-178) ..... 1
- (3) Batterijen R6P (AA) ..... 2

#### SVENSKA

Kontrollera att följande, förutom huvudapparaten, finns med i kartongen.

- (1) Bruksanvisning ..... 1
- (2) Fjärrkontroll (RC-178) ..... 1
- (3) Batterier R6P (AA) ..... 2

#### PORTUGUÊS

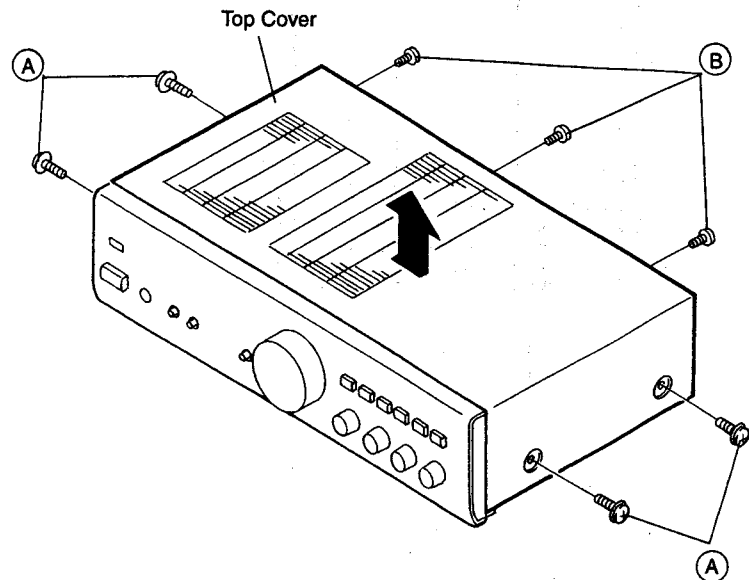
Certifique-se de que as seguintes peças estão incluídas na embalagem fora da unidade principal:

- (1) Instruções de operação ..... 1
- (2) Unidade de controle remoto (RC-178) ..... 1
- (3) Baterias R6P (AA) ..... 2

## REMOVAL OF EACH SECTION

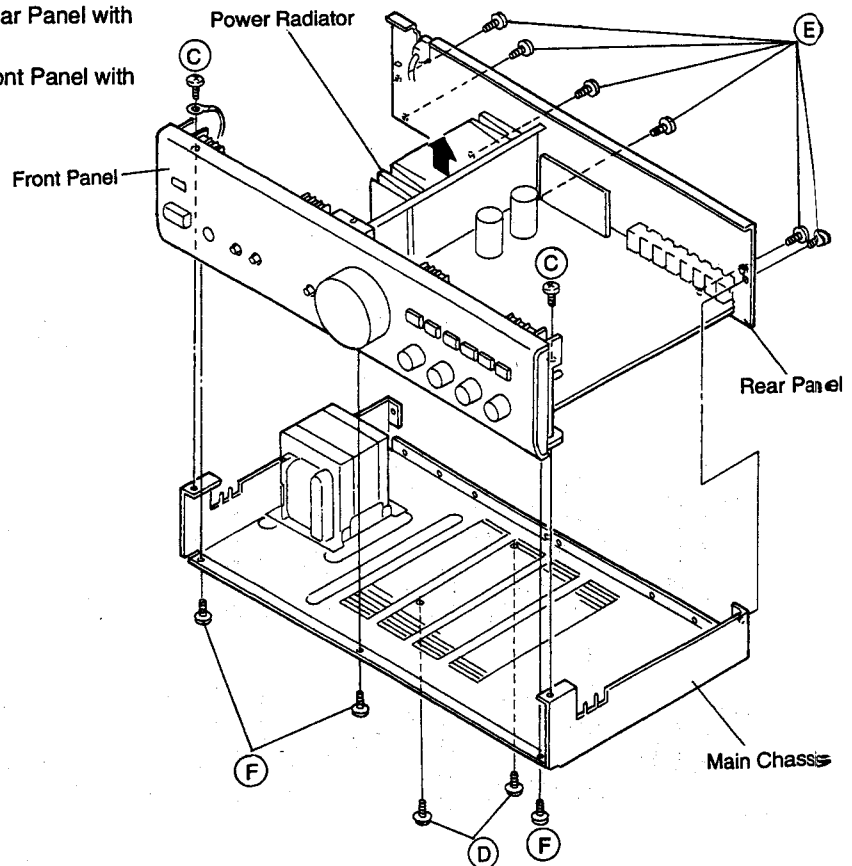
### ● Top Cover

- 1) Remove 4 screws (A) and 3 screws (B).
- 2) Pull up Top Cover in arrow direction.



### ● Main Chassis

- 1) Remove 2 screws (C).
- 2) Remove 2 screws (D) securing Power Radiator with Main Chassis.
- 3) Remove 6 screws (E) securing Rear Panel with Main Chassis.
- 4) Remove 3 screws (F) securing Front Panel with Main Chassis.

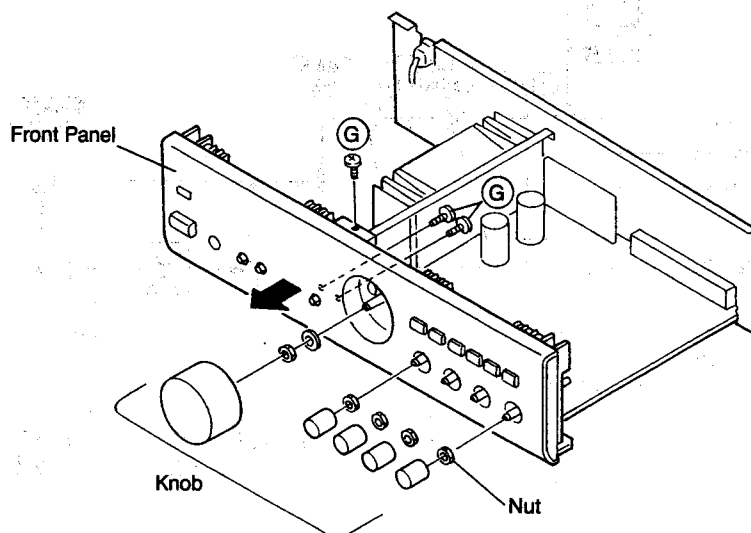




MANUAL DE INSTRUÇÕES

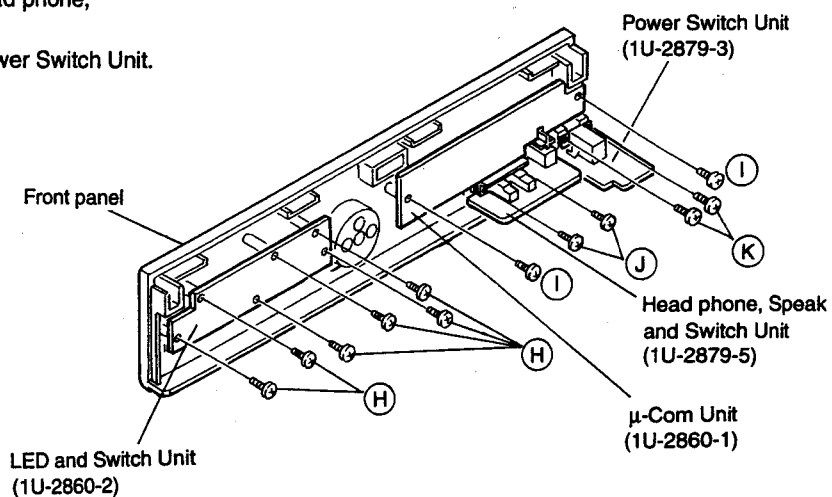
### ● Front Panel

- 1) Remove 5 Knobs and 5 nuts.
- 2) Remove 3 screws (G), and detach Front Panel in arrow direction.

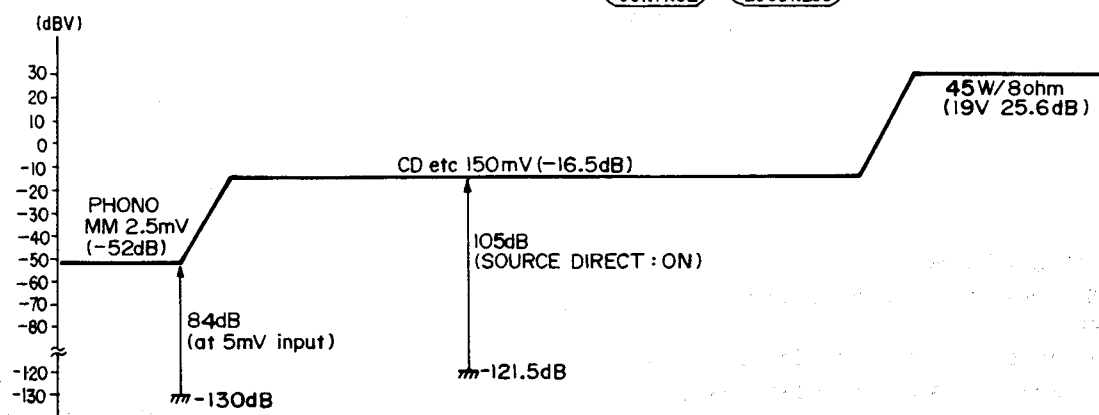
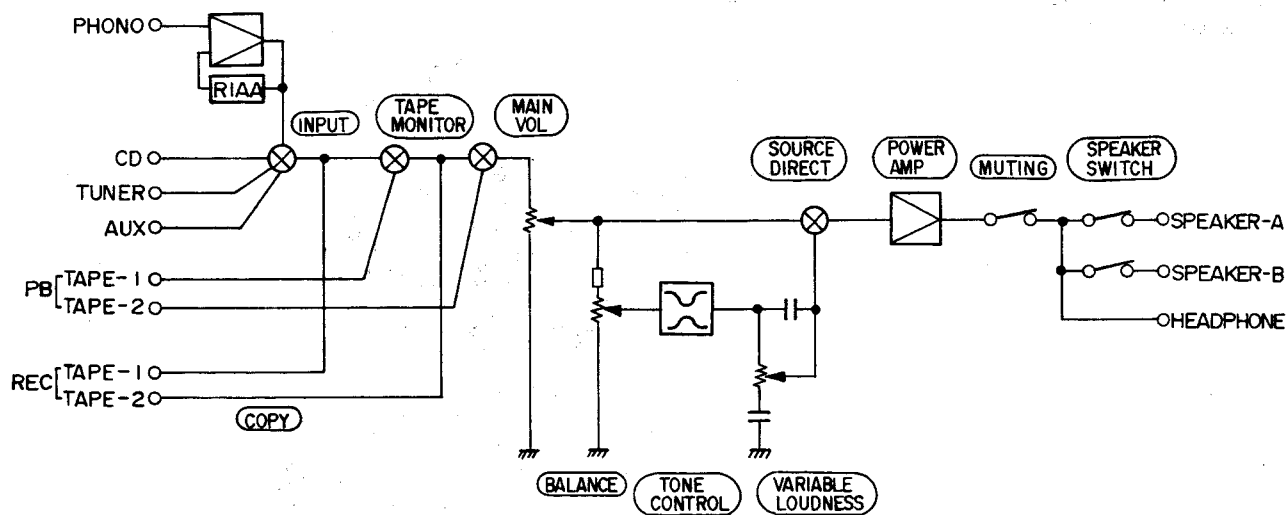


### ● Each Unit of Front Panel

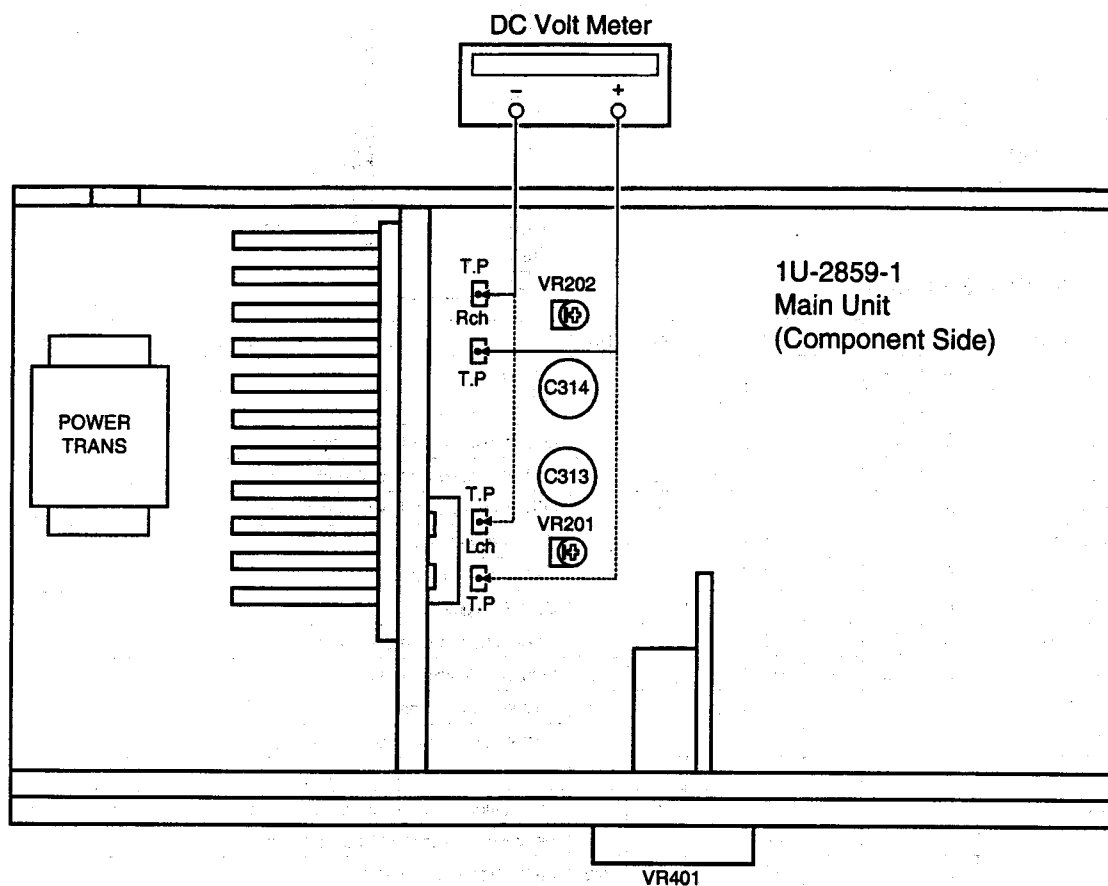
- 1) Remove 6 screws (H), and detach LED and Switch Unit.
- 2) Remove 2 screws (I), and detach  $\mu$ -Com Unit.
- 3) Remove 2 screws (J), and detach Head phone, SP Switch Unit.
- 4) Remove 2 screws (K), and detach Power Switch Unit.



## BLOCK AND LEVEL DIAGRAM



## METHOD OF ADJUSTMENTS



### IDLING CURRENT

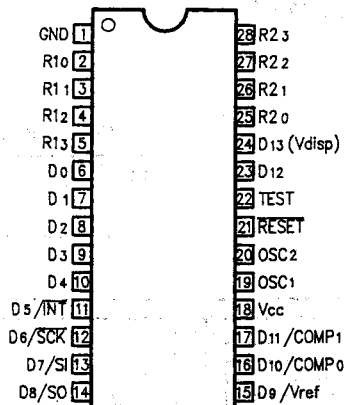
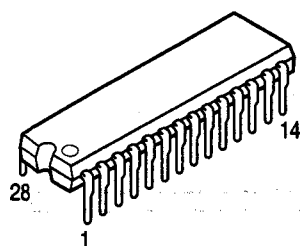
#### ● Setup

1. Lay the unit at an ordinary position away from a direct current from a cooler or fan. Do the adjustment at a temperature between 15°C (59°F) and 30°C (86°F).
2. Set controls as follows.  
 POWER SWITCH → OFF (■)  
 VOLUME CONTROL → fully counterclockwise. (⤿) min. [Main volume (VR401) and Semifixed resistors] (VR201...Lch, VR202...Rch)  
 SPEAKER Terminals → open: do not connect the speakers, dummy load etc.

#### ● Adjustment

1. Remove Top cover. And then connect DC Voltmeter to Test points of 1U-2859-1 (Main Unit).
2. Connect Power cord to AC wall outlet, and turn Power Switch "on" (■). Within 10 seconds turn VR201 (Lch) and VR202 (Rch) clockwise so that DC voltmeter reads  $17 \pm 3\text{mV DC}$ .
3. Then after 2 minutes warm up adjust VR201 and VR202 so that the DC Voltmeter reads  $17 \pm 3\text{mV DC}$ .
4. And after 10 minutes warm up adjust VR201 and VR202 so that the DC Voltmeter reads  $11 \pm 3\text{mV DC}$ .

## SEMICONDUCTORS

● IC's  
HD404222 (IC101)

## HD404222 Terminal Function

| Pin No. | Symbol       | Typ | Opt | I/O | Res | Ini | Act | Det | Function   |
|---------|--------------|-----|-----|-----|-----|-----|-----|-----|--|
| 1       | GND          | —   | —   | —   | —   | —   | —   | —   | Ground.  |
| 2       | PHONO        | B   | IU  | O   | HZ  | H   | L   | —   | LED drive output for function indication.            |
| 3       | CD           | B   | IU  | O   | HZ  | H   | L   | —   | LED drive output for function indication.            |
| 4       | TUNER        | B   | IU  | O   | HZ  | H   | L   | —   | LED drive output for function indication.            |
| 5       | AUX          | B   | IU  | O   | HZ  | H   | L   | —   | LED drive output for function indication.            |
| 6       | VOLUME UP    | B   | IU  | O   | HZ  | L   | H   | —   | Volume drive output.                                 |
| 7       | VOLUME DOWN  | B   | IU  | O   | HZ  | L   | H   | —   | Volume drive output.                                 |
| 8       | NC           | B   | IU  | I   | HZ  | L   | —   | —   | Connect to ground.                                   |
| 9       | B-DOWN       | B   | IU  | I   | HZ  | H   | L   | Lv  | Power supply stop detection input.                   |
| 10      | PROTECTION   | B   | IU  | I   | HZ  | H   | L   | Lv  | Protecting detection input.                          |
| 11      | REMOCON      | B   | IU  | I   | HZ  | H   | L   | Ed  | Remote control signal input.                         |
| 12      | CK           | B   | IU  | O   | HZ  | L   | H   | —   | Analog function switch control output (clock).       |
| 13      | ST           | B   | IU  | O   | HZ  | L   | H   | —   | Analog function switch control output (chip select). |
| 14      | DATA         | B   | IU  | O   | HZ  | L   | H   | —   | Analog function switch control output (data).        |
| 15      | VREF         | —   | —   | —   | —   | —   | —   | —   | Reference voltage input for comparator.              |
| 16      | KEY IN       | B   | IU  | I   | HZ  | —   | —   | Alg | Button signal input (analog).                        |
| 17      | NC           | B   | IU  | I   | HZ  | L   | —   | —   | Connect to ground.                                   |
| 18      | Vcc          | —   | —   | —   | —   | —   | —   | —   | Power supply.  |
| 19      | OSC1         | —   | —   | I   | —   | —   | —   | —   | Xtal input.  |
| 20      | OSC2         | —   | —   | O   | —   | —   | —   | —   | Xtal output.   |
| 21      | RESET        | —   | EU  | I   | L   | H   | H   | —   | Reset signal input.                                  |
| 22      | —            | —   | —   | I   | —   | —   | —   | —   |  |
| 23      | POWER ON/OFF | B   | IU  | O   | HZ  | H   | L   | —   | Power ON/OFF shift output (L: Power ON).             |
| 24      | MUTING       | B   | IU  | O   | HZ  | H   | H   | —   | Mute signal output (H: mute ON).                     |
| 25      | NC           | B   | IU  | O   | HZ  | L   | —   | —   | Connect to ground.                                   |
| 26      | MUTE/STANDBY | B   | IU  | O   | HZ  | H   | L   | —   | LED drive output for Mute/Standby indication.        |
| 27      | TAPE2        | B   | IU  | O   | HZ  | H   | L   | —   | LED drive output for function indication.            |
| 28      | TAPE1        | B   | IU  | O   | HZ  | H   | L   | —   | LED drive output for function indication.            |

## Note:

Typ (Type): B=NMOS open drain.

Opt (Option): IU=internal pull up, EU=external pull up.

Port state: Res=reset, Ini=standby, Act=active.

Det: Lv=level, Ed=edge, Alg=analog.

I/O: Port input / output for defined name (I: Input, O: Output).

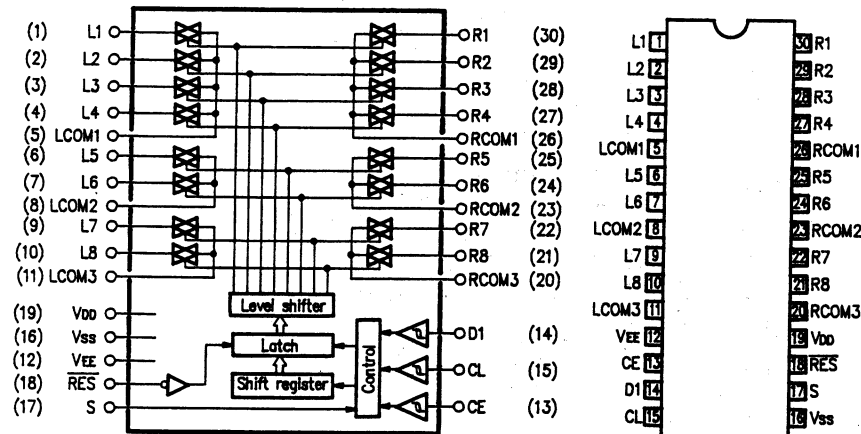
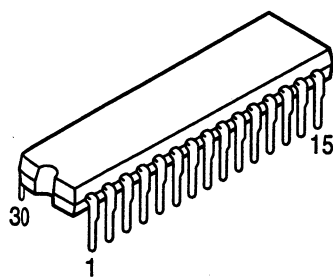
Res: Show port state at reset (H: High level, L: Low level, HZ: High impedance).

Opt: ★U: Pull up, ★D: Pull down.

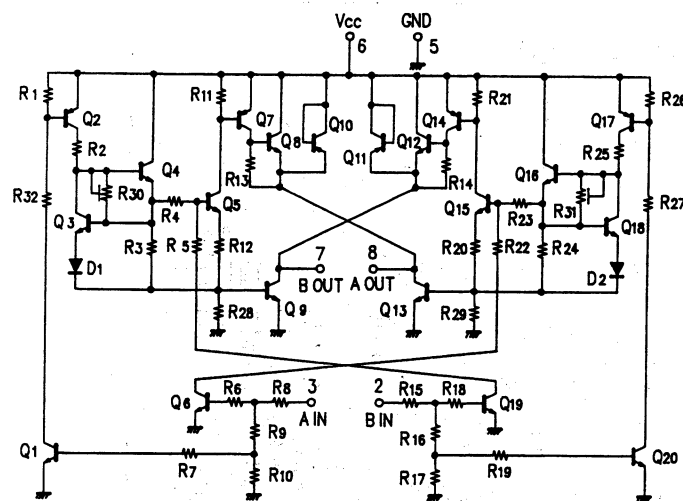
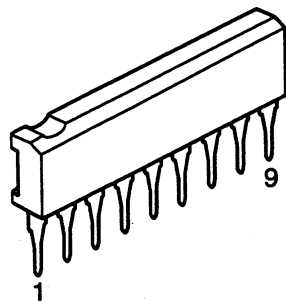
Det: Show operating condition of input port (Lv: Detect level, Ed: Detect edge).

Ini: Show input / output port initialization (H: High level, L: low level).

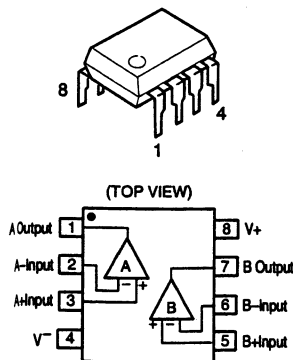
Act: Show port state at operating.

**LC7821 (IC002)**

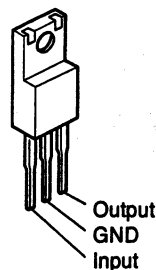
**BA6208S (IC103)**



BA15218 (IC007)  
NJM2068DDC (IC001, 201)

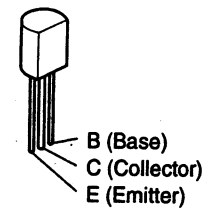


**NJM7806FA (IC104)**

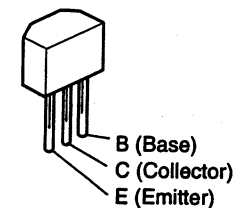


## ● TRANSISTORS

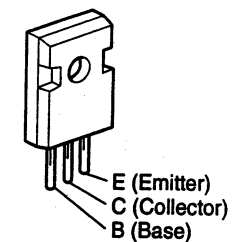
2SA988 (E/F)  
2SC1815 (BL)  
2SC1841 (E/F)



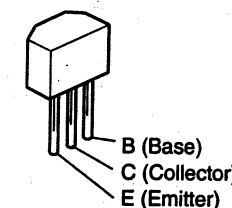
**2SA933S (S)**  
**2SC1740S (S), (E)**



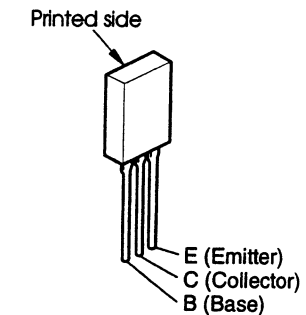
2SA1633 (E/F) (TR217,218)  
2SC4278 (E/F) (TR215,216)



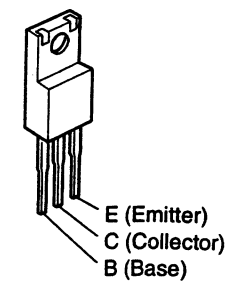
**DTC114ES NPN**  
**DTC143ZSA NPN**



**2SB1328 (P)**  
**2SD2004 (P)**



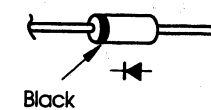
**2SD1762 (E/F)**



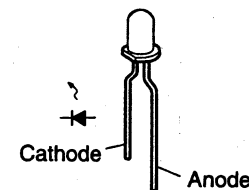
|           | R1     | R2     |
|-----------|--------|--------|
| DTC114ES  | 10kohm | 10kohm |
| DTC143ZSA | 4.7ohm | 47ohm  |

## ● DIODES (including LED)

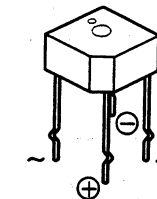
1S252  
1S2471



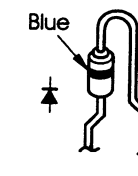
**SLR-56DU (Orange)**  
**SLR-56VR (Red)**



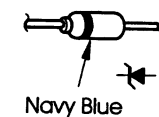
**S4VB20 (D306)**



**1SR35-200A**



**MTZ6.2A MTZJ18A**  
**MTZJ3.3A MTZJ27A**  
**MTZJ7.5C**



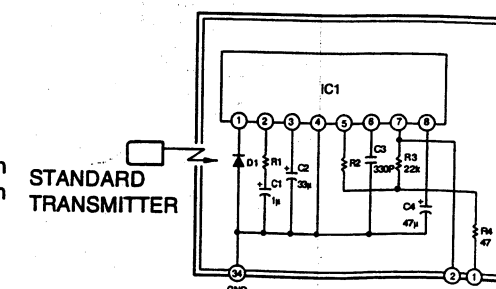
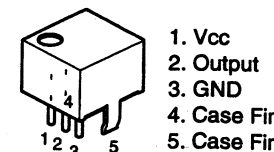
● POSISTOR

PTH9M04BB222TS2F333  
(P401)



● OTHER

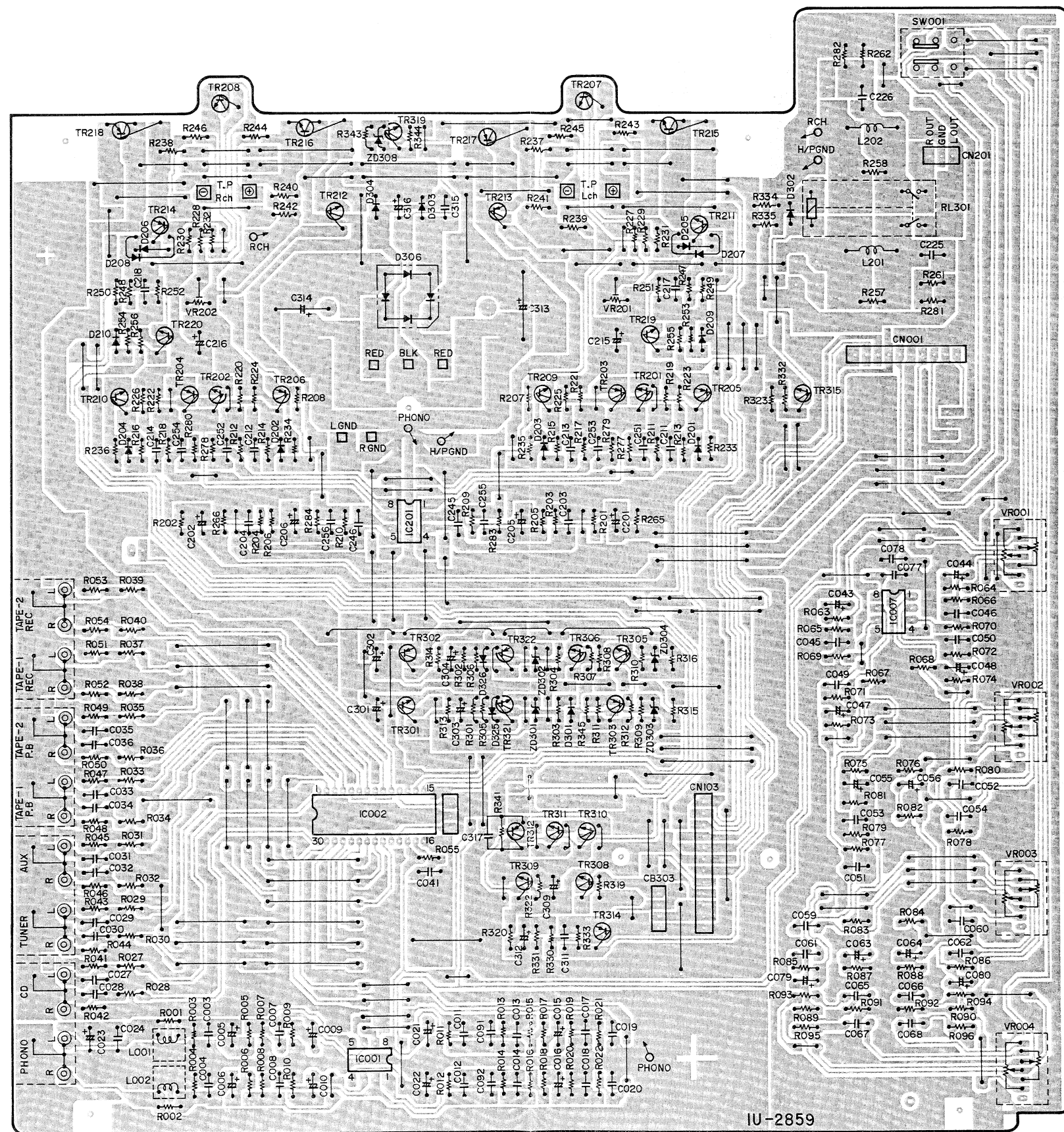
**SBX1610-52 (Remote Control Receiver) (IC105)**



|          |                                   |
|----------|-----------------------------------|
| IC1      | : CX20106A Chip                   |
| D1       | : PIN Photo Diode Chip            |
| C1,C2,C4 | : Aluminum Electrolytic Capacitor |
| C3       | : SL Characteristic $\pm 5\%$     |
| R1       | : Gain Adjuster                   |
| R2       | : fo Adjuster $\pm 1\%$ USE       |
| R3,4     | : $\pm 5\%$                       |

## PRINTED WIRING BOARD (Pattern Side)

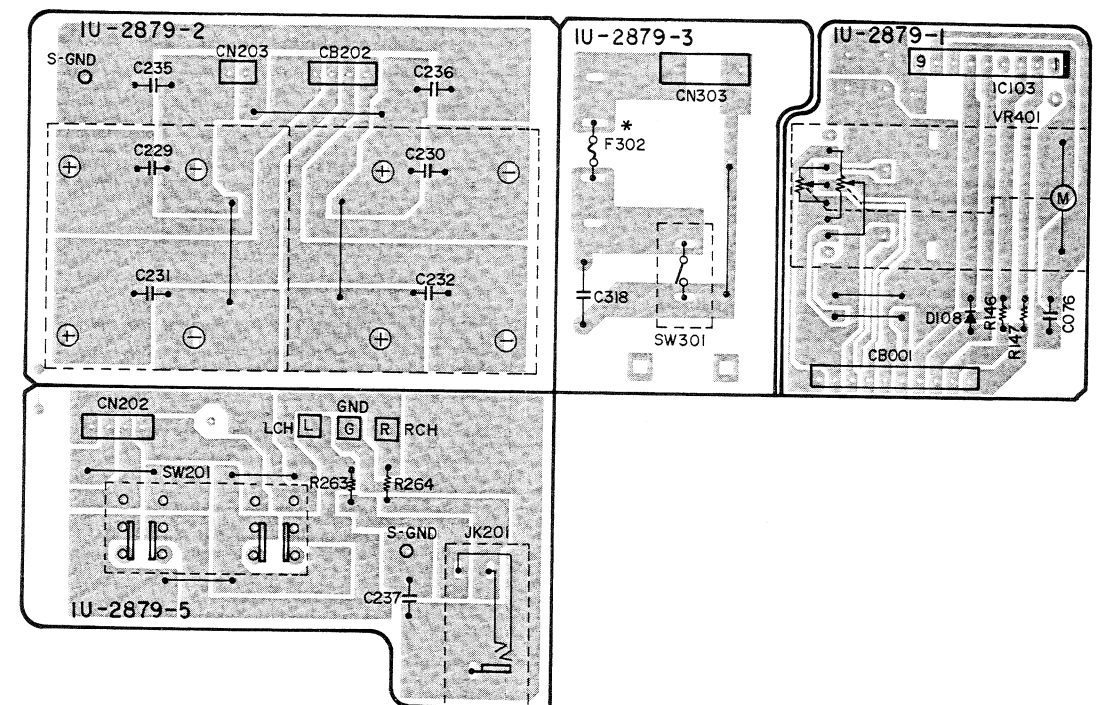
1U-2859E MAIN UNIT ASS'Y





**1U-2879 VOLUME UNIT ASS'Y**  
**1U-2879E : Europe, U.K., Australia and Asia models.**  
**1U-2879F : U.S.A., Canada and Taiwan R.O.C. models**

| 1U-2879 Volume Unit Ass'y |                        |
|---------------------------|------------------------|
| 1                         | Volume Unit            |
| 2                         | SP terminal Unit       |
| 3                         | Power Switch Unit      |
| 4                         | -                      |
| 5                         | Head Phone, SP SW Unit |



| Version                        | Unit No. | F302       |
|--------------------------------|----------|------------|
| Europe, U.K., Australia & Asia | 1U-2879E | T1.6A/250V |
| U.S.A., Canada & Taiwan R.O.C. | 1U-2879F | 5A/125V    |

## NOTE FOR PARTS LIST

- Part indicated with the mark "●" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film  $\pm 5\%$ , 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

**WARNING:**

Parts marked with this symbol  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

## ● Resistors

Ex.: RN 14K 2E 182 G FR  
Type Shape Power Resistance Allowable Others

|                       |           |                |                          |
|-----------------------|-----------|----------------|--------------------------|
| RD : Carbon           | 2B : 1/8W | F : $\pm 1\%$  | P : Pulse-resistant type |
| RC : Composition      | 2E : 1/4W | G : $\pm 2\%$  | NL : Low noise type      |
| RS : Metal oxide film | 2H : 1/2W | J : $\pm 5\%$  | NB : Non-burning type    |
| RW : Winding          | 3A : 1W   | K : $\pm 10\%$ | FR : Fuse-resistor       |
| RN : Metal film       | 3D : 2W   | M : $\pm 20\%$ | F : Lead wire forming    |
| RK : Metal mixture    | 3F : 3W   |                |                          |
|                       | 3H : 5W   |                |                          |

## ● Resistance

1 8 2  $\Rightarrow$  1800 ohm = 1.8 kohm  
Indicates number of zeros after effective number.  
2-digit effective number.

• Units: ohm

1 R 2  $\Rightarrow$  1.2 ohm  
1-digit effective number.  
2-digit effective number, decimal point indicated by R.

• Units: ohm

## ● Capacitors

Ex.: CE 04W 1H 2R2 M BP  
Type Shape Dielectric Capacity Allowable Others

|                                  |           |                  |                                  |
|----------------------------------|-----------|------------------|----------------------------------|
| CE : Aluminum foil electrolytic  | 0J : 6.3V | F : $\pm 1\%$    | HS : High stability type         |
| CA : Aluminum solid electrolytic | 1A : 10V  | G : $\pm 2\%$    | BP : Non-polar type              |
| CS : Tantalum electrolytic       | 1C : 16V  | J : $\pm 5\%$    | HR : Ripple-resistant type       |
| CQ : Film                        | 1E : 25V  | K : $\pm 10\%$   | DL : For charge and discharge    |
| CK : Ceramic                     | 1V : 35V  | M : $\pm 20\%$   | HF : For assuring high frequency |
| CC : Ceramic                     | 1H : 50V  | Z : $\pm 80\%$   | U : UL part                      |
| CP : Oil                         | 2A : 100V | -20%             | C : CSA part                     |
| CM : Mica                        | 2B : 125V | P : $\pm 100\%$  | W : UL-CSA type                  |
| CF : Metallized                  | 2C : 160V | -0%              | F : Lead wire forming            |
| CH : Metallized                  | 2D : 200V | C : $\pm 0.25pF$ |                                  |
|                                  | 2E : 250V | D : $\pm 0.5pF$  |                                  |
|                                  | 2H : 500V | = : Others       |                                  |
|                                  | 2J : 630V |                  |                                  |

## ● Capacity (electrolyte only)

2 2 2  $\Rightarrow$  2200 $\mu$ F  
Indicates number of zeros after effective number.  
2-digit effective number.

• Units:  $\mu$ F.

2 R 2  $\Rightarrow$  2.2 $\mu$ F  
1-digit effective number.  
2-digit effective number, decimal point indicated by R.

• Units:  $\mu$ F.

## ● Capacity (except electrolyte)

2 2 2  $\Rightarrow$  2200pF = 0.0022 $\mu$ F  
(More than 2) — Indicates number of zeros after effective number.  
2-digit effective number.

• Units: pF.

2 2 1  $\Rightarrow$  220pF  
(0 or 1) — Indicates number of zeros after effective number.  
2-digit effective number.

• Units: pF.

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

PARTS LIST OF P.W.B. ASS'Y  
1U-2859E MAIN UNIT ASS'Y

| Ref. No.             | Part No.     | Part Name                     | Remarks           |        |
|----------------------|--------------|-------------------------------|-------------------|--------|
| SEMICONDUCTORS GROUP |              |                               |                   |        |
| IC001                | 263 0609 002 | IC NJM2068DDC                 | Built in resistor |        |
| IC002                | 262 1227 008 | IC LC7821                     |                   |        |
| IC007                | 263 0565 007 | IC BA15218                    |                   |        |
| IC201                | 263 0609 002 | IC NJM2068DDC                 |                   |        |
| TR201,202            | 273 0235 923 | Transistor 2SC1841(E/F)       |                   |        |
| TR203~206            | 271 0131 924 | Transistor 2SA988(E/F)        |                   |        |
| TR207,208            | 273 0198 918 | Transistor 2SC1815(BL)        |                   |        |
| TR209,210            | 273 0235 923 | Transistor 2SC1841(E/F)       |                   |        |
| TR211,212            | 274 0151 000 | Transistor 2SD2004(P)         |                   |        |
| TR213,214            | 272 0107 906 | Transistor 2SB1328(P)         |                   |        |
| TR219,220            | 273 0235 923 | Transistor 2SC1841(E/F)       |                   |        |
| TR301                | 274 0151 000 | Transistor 2SD2004(P)         |                   |        |
| TR302                | 272 0107 906 | Transistor 2SB1328(P)         |                   |        |
| TR303                | 271 0131 924 | Transistor 2SA988(E/F)        |                   |        |
| TR305                | 269 0160 002 | Transistor DTC143ZSA          |                   |        |
| TR306                | 273 0235 923 | Transistor 2SC1841(E/F)       |                   |        |
| TR308~311            | 273 0303 910 | Transistor 2SC1740S(S)        |                   |        |
| TR312                | 271 0192 905 | Transistor 2SA933S(S)         |                   |        |
| TR314                | 271 0131 924 | Transistor 2SA988(E/F)        |                   |        |
| TR315                | 273 0235 923 | Transistor 2SC1841(E/F)       |                   |        |
| TR319                | 273 0303 910 | Transistor 2SC1740S(S)        |                   |        |
| TR321                | 273 0303 910 | Transistor 2SC1740S(S)        |                   |        |
| TR322                | 271 0192 905 | Transistor 2SA933S(S)         |                   |        |
| D201~204             | 276 0616 907 | Diode 1SS252                  |                   |        |
| D205~208             | 276 0619 904 | Diode 1S2471                  |                   |        |
| D209,210             | 276 0616 907 | Diode 1SS252                  |                   |        |
| D301                 | 276 0553 905 | Diode 1SR35-200A              |                   |        |
| D302                 | 276 0616 907 | Diode 1SS252                  |                   |        |
| D303,304             | 276 0553 905 | Diode 1SR35-200A              |                   |        |
| A D306               | 276 0305 901 | Diode S4VB20                  |                   | Bridge |
| D325,326             | 276 0616 907 | Diode 1SS252                  |                   |        |
| ZD301,302            | 276 0637 902 | Zener diode MTZJ6.2A          |                   | 6.2 V  |
| ZD303,304            | 276 0645 949 | Zener diode MTZJ27A           | 27 V              |        |
| ZD308                | 276 0635 904 | Zener diode MTZJ7.5C          | 7.5 V             |        |
| RESISTORS GROUP      |              |                               |                   |        |
| A R213~216           | 241 2379 932 | Carbon film 620 ohm 1/4 W(NB) | RD14B2E621JNBS    |        |
| A R233~236           | 241 2377 989 | Carbon film 150 ohm 1/4 W(NB) | RD14B2E151JNBS    |        |
| A R237,238           | 244 2051 958 | Metal oxide film 220 ohm 1 W  | RS14B3A221JNBS(S) |        |
| A R239~242           | 244 2043 982 | Metal oxide film 0.22 ohm 1 W | RS14B3AP22JNBS(S) |        |
| A R261,262           | 244 2043 937 | Metal oxide film 10 ohm 1 W   | RS14B3A100JNBS(S) |        |
| A R281,282           | 244 2043 937 | Metal oxide film 10 ohm 1 W   | RS14B3A100JNBS(S) |        |

| Ref. No.                | Part No.     | Part Name                           | Remarks           |
|-------------------------|--------------|-------------------------------------|-------------------|
| R309,310                | 244 2051 958 | Metal oxide film 220 ohm 1 W        | RS14B3A221JNBS(S) |
| R315,316                | 241 2387 940 | Carbon film 4.7 ohm 1/4 W(NB)       | RD14B2E47JNBS     |
| R334                    | 244 2052 944 | Metal oxide film 1.5 kohm 1 W       | RS14B3A152JNBS(S) |
| R335                    | 244 2050 988 | Metal oxide film 2 kohm 1 W         | RS14B3A202JNBS(S) |
| VR001                   | 211 0798 103 | Variable resistor 100 kohm          | Balance           |
| VR002                   | 211 0797 117 | Variable resistor 30 kohm           | Bass              |
| VR003                   | 211 0797 133 | Variable resistor 10 kohm           | Treble            |
| VR004                   | 211 0830 003 | Variable resistor 100 kohm          | Loudness          |
| VR201,202               | 211 6064 048 | Semi fixed resistor 5 kohm          | V06PB502          |
| <b>CAPACITORS GROUP</b> |              |                                     |                   |
| C003,004                | 253 1179 945 | Ceramic cap. 220 pF /50 V           | CK45B1H221K       |
| C005,006                | 254 4254 909 | Electrolytic 10 $\mu$ F/16 V        | CE04W1C100M       |
| C007,008                | 253 1179 903 | Ceramic cap. 100 pF /50 V           | CK45B1H101K       |
| C009,010                | 254 4256 952 | Electrolytic 220 $\mu$ F/25 V       | CE04W1E221M       |
| C011,012                | 255 1265 978 | Mylar film cap. 0.022 $\mu$ F/50 V  | CQ93M1H223J(B)    |
| C013,014                | 255 1265 907 | Mylar film cap. 0.0068 $\mu$ F/50 V | CQ93M1H682J(B)    |
| C015,016                | 254 4254 909 | Electrolytic 10 $\mu$ F/16 V        | CE04W1C100M       |
| C017~020                | 253 1179 945 | Ceramic cap. 220 pF /50 V           | CK45B1H221K       |
| C021~023                | 254 4260 948 | Electrolytic 1 $\mu$ F/50 V         | CE04W1H010M       |
| C024                    | 253 1181 904 | Ceramic cap. 0.01 $\mu$ F/50 V      | CK45F1H103Z       |
| C027~036                | 253 4537 982 | Ceramic cap. 56 pF /50 V            | CC45SL1H560J      |
| C041                    | 255 1265 936 | Mylar film cap. 0.01 $\mu$ F/50 V   | CQ93M1H103J(B)    |
| C043,044                | 254 4254 909 | Electrolytic 10 $\mu$ F/16 V        | CE04W1C100M       |
| C045,046                | 253 1179 903 | Ceramic cap. 100 pF /50 V           | CK45B1H101K       |
| C047,048                | 254 4254 938 | Electrolytic 47 $\mu$ F/16 V        | CE04W1C470M       |
| C049,050                | 253 1179 903 | Ceramic cap. 100 pF /50 V           | CK45B1H101K       |
| C051,052                | 255 1264 940 | Mylar film cap. 0.0022 $\mu$ F/50 V | CQ93M1H222J(B)    |
| C053,054                | 256 1035 907 | Metalized cap. 0.18 $\mu$ F/50 V    | CF93A1H184J       |
| C055,056                | 254 4260 948 | Electrolytic 1 $\mu$ F/50 V         | CE04W1H010M       |
| C059,060                | 255 1265 949 | Mylar film cap. 0.012 $\mu$ F/50 V  | CQ93M1H123J(B)    |
| C061,062                | 256 1034 940 | Metalized cap. 0.056 $\mu$ F/50 V   | CF93A1H563J       |
| C063,064                | 254 4260 922 | Electrolytic 0.33 $\mu$ F/50 V      | CE04W1HR33M       |
| C065,066                | 253 1179 990 | Ceramic cap. 560 pF /50 V           | CK45B1H561K       |
| C067,068                | 255 1265 978 | Mylar film cap. 0.022 $\mu$ F/50 V  | CQ93M1H223J(B)    |
| C077,078                | 253 1181 904 | Ceramic cap. 0.01 $\mu$ F/50 V      | CK45F1H103Z       |
| C079,080                | 254 4254 909 | Electrolytic 10 $\mu$ F/16 V        | CE04W1C100M       |
| C091,092                | 255 1264 940 | Mylar film cap. 0.0022 $\mu$ F/50 V | CQ93M1H222J(B)    |
| C201,202                | 254 4260 964 | Electrolytic 3.3 $\mu$ F/50 V       | CE04W1H3R3M       |
| C203,204                | 253 4538 907 | Ceramic cap. 68 pF /50 V            | CC45SL1H680J      |
| C205,206                | 254 4256 936 | Electrolytic 47 $\mu$ F/25 V        | CE04W1E470M       |
| C211~214                | 253 4538 910 | Ceramic cap. 75 pF /50 V            | CC45SL1H750J      |
| C215,216                | 254 4260 948 | Electrolytic 1 $\mu$ F/50 V         | CE04W1H010M       |
| C217,218                | 255 1265 936 | Mylar film cap. 0.01 $\mu$ F/50 V   | CQ93M1H103J(B)    |
| C225,226                | 256 1034 979 | Metalized cap. 0.1 $\mu$ F/50 V     | CF93A1H104J       |
| C245,246                | 253 4537 982 | Ceramic cap. 56 pF /50 V            | CC45SL1H560J      |



1U-2923  $\mu$ -COM UNIT ASS'Y

| Ref. No.     | Part No.        | Part Name                          | Remarks         |
|--------------|-----------------|------------------------------------|-----------------|
| C251~254     | 255 1264 982    | Mylar film cap.0.0047 $\mu$ F/50 V | CQ93M1H472J(B)  |
| C255,256     | 253 4537 924    | Ceramic cap. 33 pF /50 V           | CC45SL1H330J    |
| C301,302     | 254 4260 948    | Electrolytic 1 $\mu$ F/50 V        | CE04W1H010M     |
| C303,304     | 254 4260 980    | Electrolytic 10 $\mu$ F/50 V       | CE04W1H100M     |
| C309         | 254 4250 945    | Electrolytic 330 $\mu$ F/6.3 V     | CE04W0J331M     |
| C311         | 253 1181 904    | Ceramic cap. 0.01 $\mu$ F/50 V     | CK45F1H103Z     |
| C312         | 254 4256 936    | Electrolytic 47 $\mu$ F/25 V       | CE04W1E470M     |
| C313,314     | 254 6197 006    | Electrolytic 8200 $\mu$ F/56 V     | CE68W=822MC(DL) |
| C315         | 256 1042 903    | Metalized cap. 0.1 $\mu$ F/250 V   | CF93A2E104K     |
| C316         | 254 4263 916    | Electrolytic 0.22 $\mu$ F/100 V    | CE04W2AR22M     |
| C317         | 253 9039 906    | BC ceramic cap. 0.1 $\mu$ F/25 V   | CK45=1E104Z     |
| OTHER GROUP  |                 |                                    |                 |
|              |                 | (P.W.board)                        | Q'ty            |
| L001,002     | 235 9003 002    | FTZ choke coil                     | 2               |
| L201,202     | 235 0104 007    | Inductor 1 $\mu$ H                 | 2               |
| SW001        | 212 4797 006    | 1 p push switch                    | 1               |
| RL301        | 214 0129 001    | Relay(DH2TU)                       | 1               |
|              | 204 8497 000    | 4 p pin jack(GND)(K)               | 4               |
| CN001        | 205 0666 007    | 10 p conn. base(9130)              | 1               |
|              | 205 0233 045    | 4 p EH conn. base                  | 1               |
|              | 203 5115 007    | 3 p SCN conn. cord                 | 1               |
|              | 203 0632 022    | 1 p SIN cord Ass'y                 | 1               |
|              | 203 0632 006    | 1 p SIN cord Ass'y                 | 1               |
|              | 203 0632 019    | 1 p SIN cord Ass'y                 | 1               |
|              | 205 0275 029    | 12 p EH conn. base                 | 1               |
| EP- 5667 H2  | Terminal        | L=20                               | 10              |
| 415 0309 071 | PVC tube (L=10) | for TR207,208                      | 4               |

| Ref. No.             | Part No.     | Part Name                         | Remarks           |
|----------------------|--------------|-----------------------------------|-------------------|
| SEMICONDUCTORS GROUP |              |                                   |                   |
| IC101                | 262 2168 001 | IC HD404222                       | $\mu$ -com        |
| IC104                | 263 0793 002 | IC NJM7806FA(S)                   | Regulator +6 V    |
| IC105                | 499 0150 008 | IC SBX1610-52                     | Remocon sensor    |
| TR104                | 269 0020 906 | Transistor DTC114ES               | Built in resistor |
| TR106                | 273 0388 906 | Transistor 2SC1740S(E)            |                   |
| TR181,182            | 269 0160 002 | Transistor DTC143ZSA              | Built in resistor |
| TR307                | 274 0120 002 | Transistor 2SD1762(E/F)           |                   |
| D104,105             | 276 0616 907 | Diode 1SS252                      |                   |
| D106,107             | 276 0553 905 | Diode 1SR35-200A                  |                   |
| D110                 | 276 0616 907 | Diode 1SS252                      |                   |
| ZD101                | 276 0634 905 | Zener diode MTZJ3.3A              | 3.3 V             |
| ZD305                | 276 0645 907 | Zener diode MTZJ18A               | 18 V              |
| LD101                | 393 9559 904 | LED (SLR-56DU)                    | Orange            |
| LD102~107            | 393 9515 906 | LED (SLR-56VR)                    | Red               |
| P401                 | 279 0034 067 | Posistor<br>PTH9M04BB222TS2F333   |                   |
| RESISTORS GROUP      |              |                                   |                   |
| $\Delta$ R141        | 241 2387 940 | Carbon Film 4.7 ohm 1/4 W(NB)     | RD14B2E4R7JNBS    |
| CAPACITORS GROUP     |              |                                   |                   |
| C101                 | 253 1181 904 | Ceramic cap. 0.01 $\mu$ F/50 V    | CK45F1H103Z       |
| C103                 | 254 4250 929 | Electrolytic 100 $\mu$ F/6.3 V    | CE04W0J101M       |
| C104                 | 254 4260 951 | Electrolytic 2.2 $\mu$ F/50 V     | CE04W1H2R2M       |
| C105                 | 256 1034 982 | Metalized cap. 0.12 $\mu$ F/50 V  | CF93A1H124J       |
| C106                 | 254 4250 932 | Electrolytic 220 $\mu$ F/6.3 V    | CE04W0J221M       |
| C107                 | 254 4250 084 | Electrolytic 3300 $\mu$ F/6.3 V   | CE04W0J332M       |
| C108                 | 255 1265 936 | Mylar Film cap. 0.01 $\mu$ F/50 V | CQ93M1H103J(B)    |
| C111,112             | 254 4260 948 | Electrolytic 1 $\mu$ F/50 V       | CE04W1H010M       |
| C114                 | 253 9039 906 | BC Ceramic cap. 0.1 $\mu$ F/25 V  | CK45=1E104Z       |
| C120                 | 254 4260 919 | Electrolytic 0.22 $\mu$ F/50 V    | CE04W1HR22M       |
| C306                 | 253 1181 904 | Ceramic cap. 0.01 $\mu$ F/50 V    | CK45F1H103Z       |

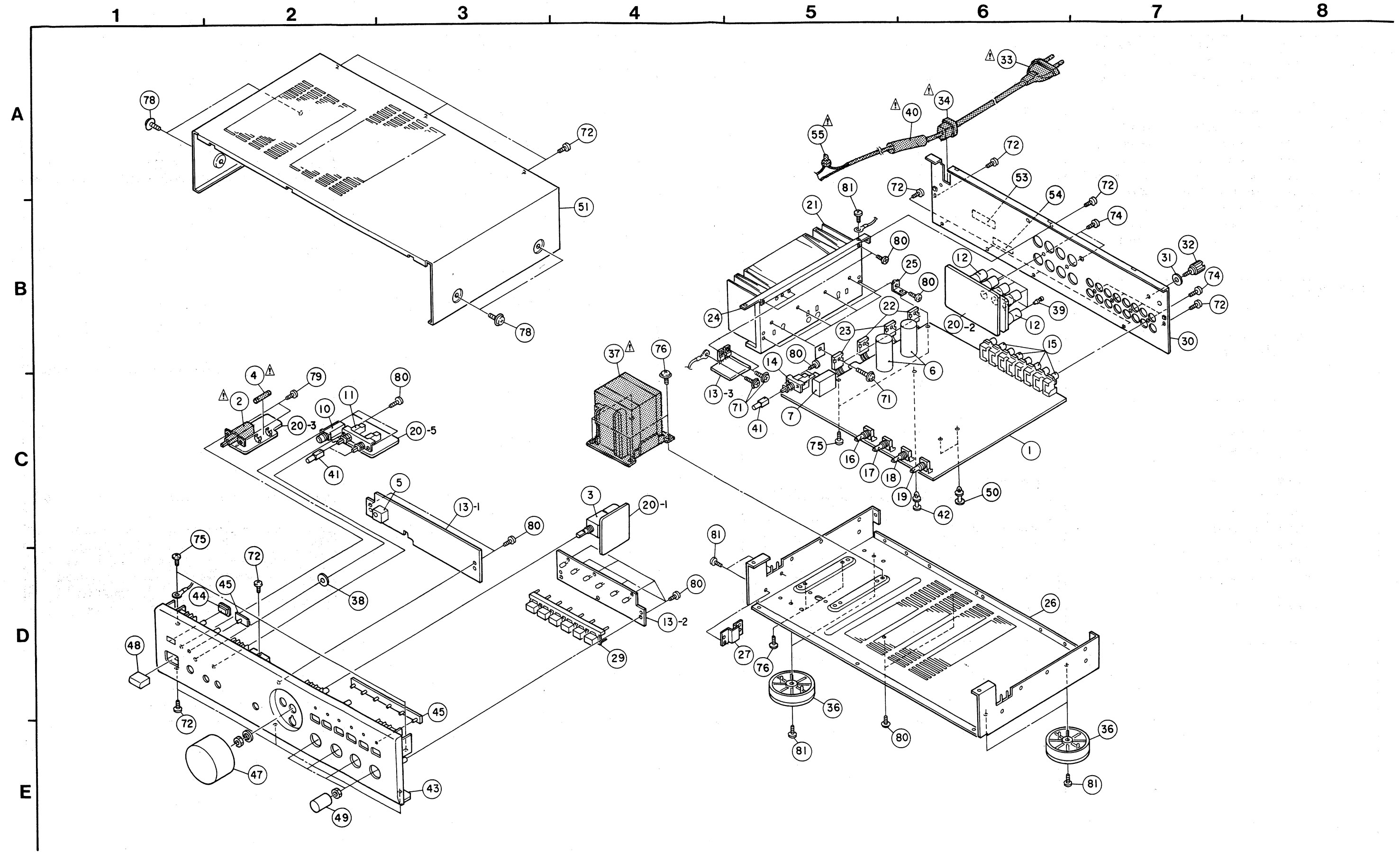
## 1U-2879 VOLUME UNIAST ASS'Y

1U-2879E : Europe ,U.K., Australia & Asia models.  
1U-2879F : U.S.A.,Canada & Taiwan R.O.C. models.

| Ref. No.    | Part No.     | Part Name              | Remarks |
|-------------|--------------|------------------------|---------|
| OTHER GROUP |              |                        |         |
|             |              | (P.W.board)            | Q'ty    |
| SW101~106   | 212 4789 001 | Tact switch(kyung)     | 6       |
| XL101       | 399 0191 903 | Ceramic resonator      | 1       |
|             | 205 0233 090 | 9 p EH connector base  | 1       |
|             | 205 0275 029 | 12 p EH connector base | 1       |
|             | 204 2747 002 | 9 p EH connector cord  | 1       |
|             | 204 6475 005 | 4 p EH connector cord  | 1       |
|             | 203 0633 018 | 1 p cotact Ass'y       | 1       |
|             | 415 0309 026 | PVC tube (L=20)        | 2       |
|             |              | for P401               |         |

| Ref. No.   | Part No.        | Part Name                          | Remarks           |
|--|-----------------|------------------------------------|-------------------|
| SEMICONDUCTORS GROUP   |                 |                                    |                   |
| IC103  | 263 0927 001    | IC BA6208S                         |                   |
| D108   | 276 0616 907    | Diode 1SS252                       |                   |
| RESISTORS GROUP (Not included carbon film $\pm 5\%$ , 1/4 W type.) |                 |                                    |                   |
| $\Delta$ R263,264  | 244 2052 931    | Metal oxide film 390 ohm 1 W       | RS14B3A391JNBS(S) |
| VR401  | 211 0857 002    | Variable resister 100 kohm         | Main              |
| CAPACITORS GROUP   |                 |                                    |                   |
| C076   | 253 1181 904    | Ceramic cap. 0.01 $\mu$ F/50 V     | CK45F1H103Z       |
| C229~232   | 255 1264 982    | Mylar film cap.0.0047 $\mu$ F/50 V | CQ93M1H472J(B)    |
| C235,236   | 253 1181 904    | Ceramic cap. 0.01 $\mu$ F/50 V     | CK45F1H103Z       |
| C237   | 253 9039 906    | BC ceramic cap. 0.1 $\mu$ F/25 V   | CK45=1E104Z       |
| $\Delta$ C318  | 256 8003 713    | Ceramic cap. 4700 pF /400 V        | CK45E2GAC472HC    |
| OTHER GROUP  |                 |                                    |                   |
|  |                 | (P.W.board)                        | Q'ty              |
| SW201  | 212 4798 005    | 2 p push switch                    | 1                 |
| $\Delta$ SW301   | 212 1030 009    | Power switch (TV-5)                | 1                 |
| $\Delta$ F302  | 206 1015 058    | Fuse 1.6 A                         | 1                 |
| $\Delta$ F302  | 206 1046 027    | Fuse 5 A                           | 1                 |
|  | 202 0022 008    | Fuse holder                        | 2                 |
|  | 204 8503 004    | :Headphone jack(K)                 | 1                 |
|  | 205 0952 009    | 4 p sp terminal                    | 2                 |
| CB001  | 205 0667 006    | 10 p conn. base-L(9130)            | 1                 |
| CB002  | 203 5122 003    | 3 p EH-SCN conn. cord              | 1                 |
| CN303  | 205 0692 000    | 2 p wrapping terminal              | 1                 |
|  | 203 0633 005    | 1 p contact Ass'y                  | 2                 |
|  | 203 6476 004    | 4 p SCN-SCN conn. cord             | 1                 |
|  | 203 5116 006    | 3 p EH-SCN conn. cord              | 1                 |
| EP- 5667 H2  | Terminal (L=20) |                                    | 3                 |

EXPLODED VIEW OF CHASSIS AND CABINET



## PARTS LIST OF EXPLODED VIEW

| Ref. No. | Part No.     | Part Name                    | Remarks  | Q'ty |
|----------|--------------|------------------------------|--|------|
| 1        | 1U-2859 E    | Main P.W.B. unit Ass'y       |  | 1s   |
| 2        | 212 1030 009 | Power switch (TV-5)          | SW301  | 1    |
| 3        | 211 0857 002 | Variable resistor 100k ohm   | Main VR401                                     | 1    |
| 4        | 206 1015 058 | Fuse 1.6 A                   | F302 Europe, U.K.,<br>Australia, & Asia models | 1    |
| 4        | 206 1046 027 | Fuse 5A/125V                 | F302 U.S.A., Canada,<br>& Taiwan R.O.C. models | 1    |
| 5        | 499 0150 008 | Remocon sensor SBX1610-52    | IC105  | 1    |
| 6        | 254 6197 006 | Chemicon 8200 $\mu$ F/56 V   | C313,314                                       | 2    |
| 7        | 214 0129 001 | Relay (DH2TU)                | RL301  | 1    |
| 8        | —            | —                            | —  | —    |
| 9        | —            | —                            | —  | —    |
| 10       | 204 8503 004 | :Headphone jack              | —  | 1    |
| 11       | 212 4798 005 | 2 p push switch              | Speaker SW201                                  | 1    |
| 12       | 205 0952 009 | 4 p speaker terminal         | —  | 2    |
| 13       | 1U-2923      | $\mu$ -com P.W.B. unit Ass'y | —  | 1s   |
| 13-1     | —            | $\mu$ -com unit              | —  | (1)  |
| 13-2     | —            | LED & switch unit            | —  | (1)  |
| 13-3     | —            | Regulator unit               | —  | (1)  |
| 14       | 212 4797 006 | 1 p push switch              | S.Direct SW001                                 | 1    |
| 15       | 204 8497 000 | 4 p pin jack (GND)(K)        | —  | 4    |
| 16       | 211 0798 103 | Variable resistor 100k ohm   | Balance VR001                                  | 1    |
| 17       | 211 0797 117 | Variable resistor 30k ohm    | Bass VR002                                     | 1    |
| 18       | 211 0797 133 | Variable resistor 10k ohm    | Treble VR003                                   | 1    |
| 19       | 211 0830 003 | Variable resistor 100k ohm   | Loudness VR004                                 | 1    |
| 20       | 1U-2879 E    | Volume P.W.B. unit Ass'y     | Europe, U.K., Australia,<br>& Asia models      | 1s   |
| 20       | 1U-2879 F    | Volume P.W.B. unit Ass'y     | U.S.A., Canada, &<br>Taiwan R.O.C. models      | 1s   |
| 20-1     | —            | Volume unit                  | —  | (1)  |
| 20-2     | —            | SP terminal unit             | —  | (1)  |
| 20-3     | —            | Power switch unit            | —  | (1)  |
| 20-4     | —            | —                            | —  | —    |
| 20-5     | —            | Headphone, sp sw unit        | —  | (1)  |
| 21       | 417 0519 003 | :*Power radiator             | —  | 1    |
| 22       | 271 0283 005 | Transistor 2SA1633 (E/F)     | TR217,218                                      | 2    |
| 23       | 273 0443 003 | Transistor 2SC4278 (E/F)     | TR215,216                                      | 2    |
| 24       | 412 3999 104 | :*Radiator bracket           | —  | 1    |
| 25       | 412 4000 005 | :*P.W.B. bracket(A)          | —  | 2    |
| 26       | 411 0941 602 | :*Chassis                    | —  | 1    |
| 27       | 412 4001 004 | :*Side bracket               | —  | 1    |
| 28       | —            | —                            | —  | —    |
| 29       | 113 1739 003 | :*Function button            | —  | 1    |
| 30       | 105 1191 006 | :*Rear panel                 | Europe, U.K., Australia,<br>& Asia models      | 1    |
| 30       | 105 1191 019 | :*Rear panel                 | U.S.A., Canada, &<br>Taiwan R.O.C. models      | 1    |
| 31       | 477 0018 001 | Washer (P-87)                | —  | 1    |
| 32       | 205 0071 016 | Terminal Ass'y               | GND  | 1    |

| Ref. No. | Part No.     | Part Name              | Remarks                                   | Q'ty |
|----------|--------------|------------------------|---|------|
| 33       | 206 2063 009 | AC cord with plug      | Europe model                              | 1    |
| 33       | 206 2131 009 | AC cord with plug      | U.K. model                                | 1    |
| 33       | 206 2050 009 | AC cord with plug      | U.S.A., Canada, &<br>Taiwan R.O.C. models | 1    |
| 34       | 445 0056 008 | Cord bush              | —   | 1    |
| 35       | —            | —                      | —   | —    |
| 36       | 104 0282 007 | :*Foot Ass'y           | —   | 4    |
| 37       | 233 6197 009 | :*Power transformer    | Europe, U.K., Australia,<br>& Asia models | 1    |
| 37       | 233 6204 002 | :*Power transformer    | U.S.A., Canada, &<br>Taiwan R.O.C. models | 1    |
| 38       | 475 1175 002 | :Washer                | —   | 1    |
| 39       | 477 0096 007 | Push rivet             | —   | 8    |
| 40       | 415 0461 003 | UL tube ( $\phi$ 14.3) | for AC cord                               | 1    |
| 41       | 113 1745 107 | :*Push button (Round)  | —   | 3    |
| 42       | 412 1979 029 | P.C.B. holder          | —   | 1    |
| 43       | 146 1614 005 | :*Front panel          | —   | 1    |
| 44       | 143 0983 000 | :*Remocon window       | —   | 1    |
| 45       | 143 0971 009 | :*Lens                 | —   | 1    |
| 46       | 445 8004 007 | Wire clasper           | —   | 10   |
| 47       | 112 0761 008 | :*VR knob              | —   | 1    |
| 48       | 113 1738 101 | :*Power button         | —   | 1    |
| 49       | 112 0762 007 | :*Knob(Round)          | —   | 4    |
| 50       | 412 2814 015 | Card spacer (L=14)     | —   | 2    |
| 51       | 102 0567 001 | :*Top cover            | —   | 1    |
| 52       | —            | —                      | —   | —    |
| 53       | 513 2433 003 | Serial No. sheet       | —   | 1    |
| 54       | 513 2444 002 | Label (China)          | Put on R/panel                            | 1    |
| 55       | 203 0150 009 | Wire connector         | —   | 1    |

## SCREWS

|    |              |                           |    |
|----|--------------|---------------------------|----|
| 71 | 473 8007 009 | Cup screw 3x12            | 7  |
| 72 | 473 7015 018 | Tapping screw(S)3x8 Black | 14 |
| 73 | —            | —                         | —  |
| 74 | 477 0064 107 | Fixing screw              | 6  |
| 75 | 473 7002 018 | Tapping screw(S)3x8       | 4  |
| 76 | 473 7004 016 | Tapping screw(S)4x6       | 6  |
| 77 | —            | —                         | —  |
| 78 | 477 0263 005 | 3 P Swelling screw        | 4  |
| 79 | 473 7508 004 | Tapping screw(P)3x6 Black | 2  |
| 80 | 473 7500 044 | Tapping screw(P)3x8 Black | 19 |
| 81 | 473 7002 034 | Tapping screw(S)3x6 Black | 7  |
| 82 | —            | —                         | —  |

| Ref. No.  | Part No.     | Part Name           | Remarks                   | Q'ty |
|---|--------------|---------------------|---------------------------|------|
| PACKING & ACCESSORIES (Not included EXPLODED VIEW.) |              |                     |                           |      |
| 101   | GEN 3466     | Envelope sub. Ass'y | —                         | 1s   |
| 101-1   | 505 8006 019 | Envelope            | —                         | (1)  |
| 101-2   | 511 2849 xxx | *Inst. manual       | E, G, F, I, ES, NL, S, PO | (1)  |
| 101-3   | 499 0277 004 | Remote control      | RC-176                    | (1)  |
| 101-4   | —            | Batteries           | —                         | (2)  |
| 102   | 505 8092 010 | Laminate envelope   | —                         | 1    |
| 103   | 503 1191 103 | :*Cushion           | —                         | 2    |
| 104   | 501 1904 006 | :*Carton case       | —                         | 1    |
| 105   | 513 2446 003 | China label (E)     | Put on carton case        | 1    |
| 106   | 513 2447 002 | China label (F)     | Put on carton case        | 1    |
| 107   | 504 0168 004 | AC protect sheet    | U.K. model only           | 1    |

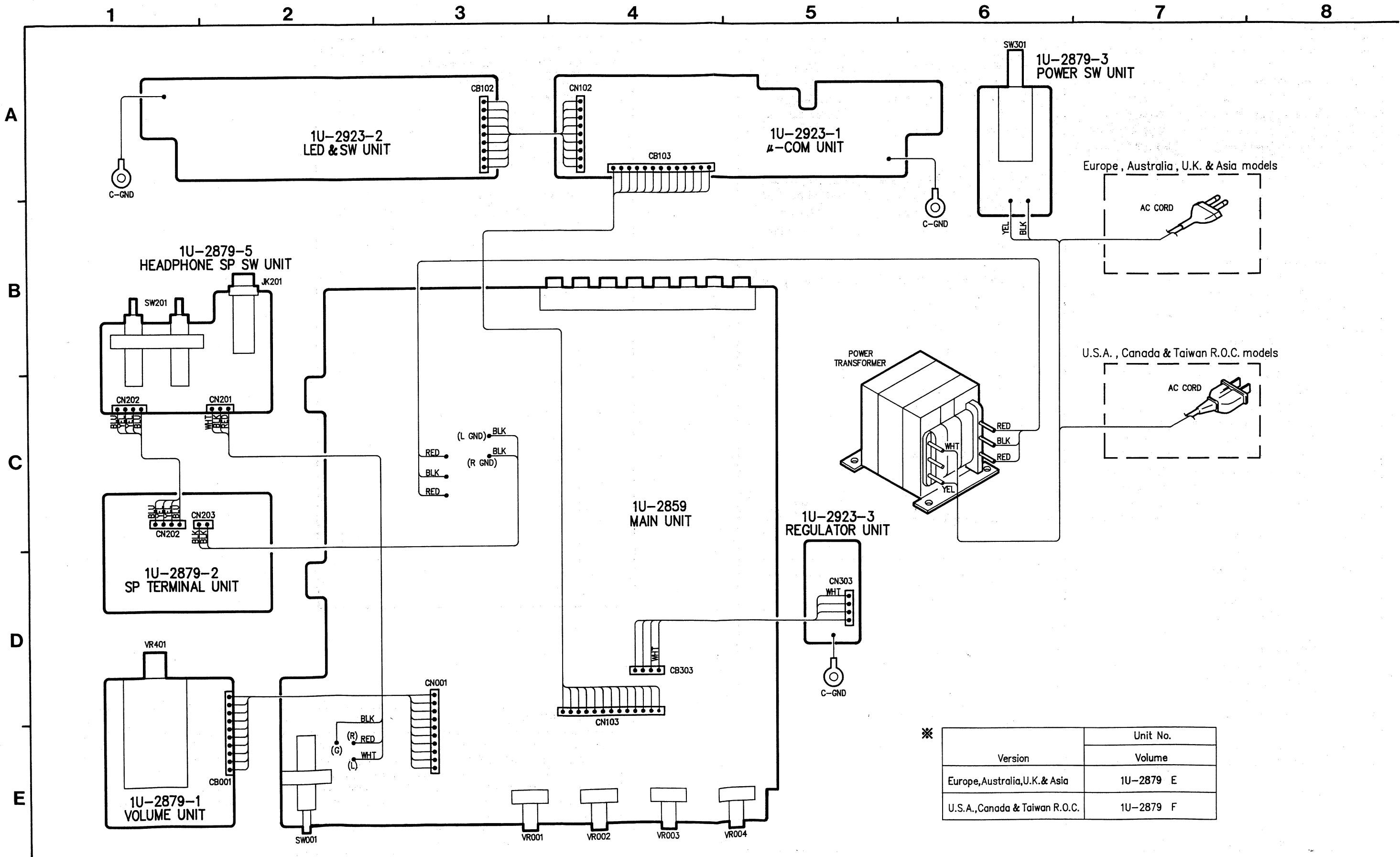
## NOTE FOR PARTS LIST

- Part indicated with the mark " ● " are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "I" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film  $\pm 5\%$ , 1/4W Type in the P.W.Board parts list. (Refer to the Schematic Diagram for those parts.)

## WARNING:

Parts marked with this symbol  $\Delta$  have critical characteristics.  
Use ONLY replacement parts recommended by the manufacturer.

WIRING DIAGRAM



※

| Version                       | Unit No.  |
|-------------------------------|-----------|
|                               | Volume    |
| Europe,Australia,U.K.& Asia   | 1U-2879 E |
| U.S.A.,Canada & Taiwan R.O.C. | 1U-2879 F |

# SCHEMATIC DIAGRAM

1

2

3

4

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